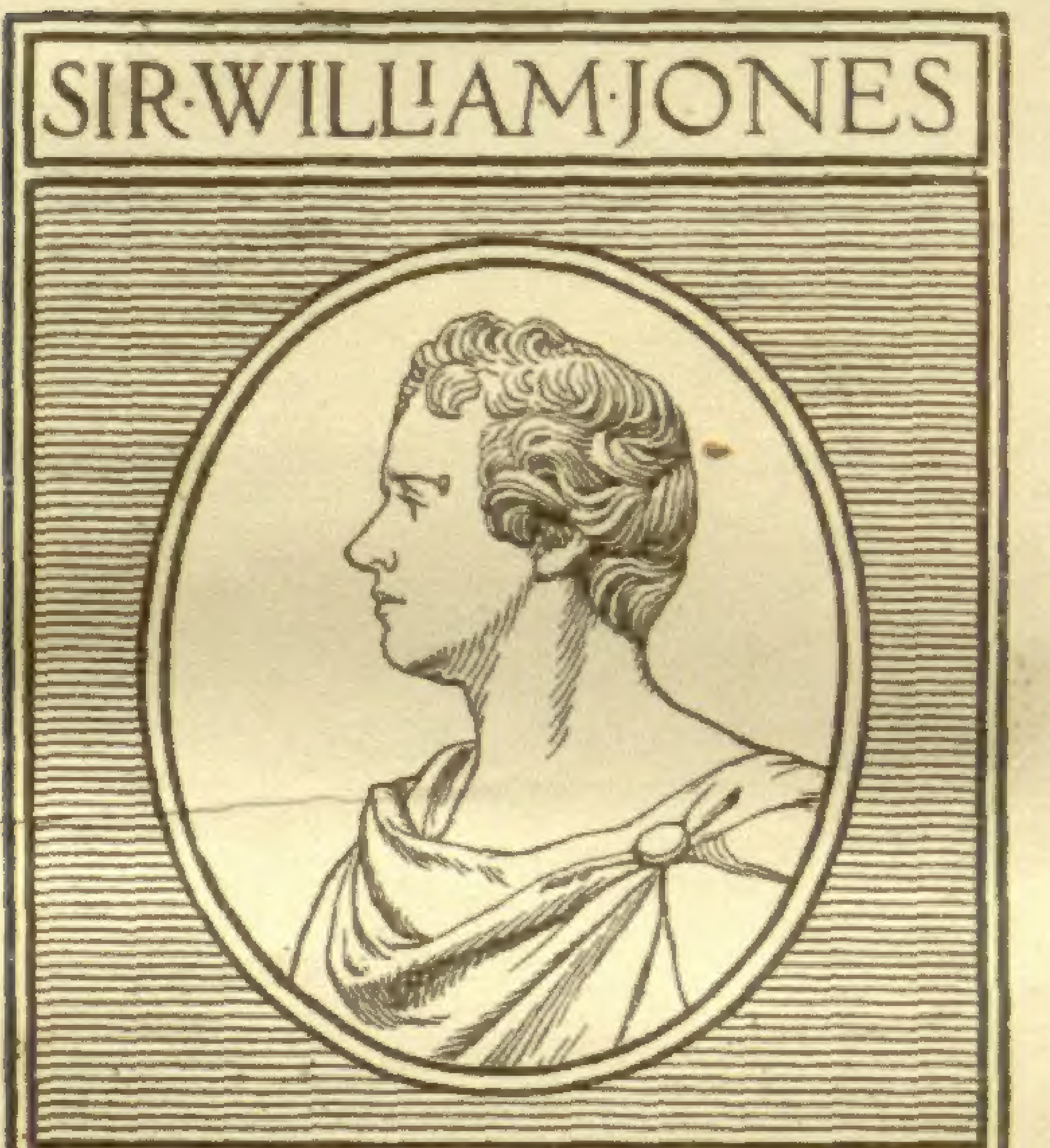
JOURNAL & PROCEEDINGS

OF THE

ASIATIC SOCIETY OF BENGAL.

New Series, Vol. I.

1905.


SIR·WILLIAM·JONES
MDCCXLVI-MDCCXCIV

CALCUTTA:
PRINTED AT THE BAPTIST MISSION PRESS, AND PUBLISHED BY THE
ASIATIC SOCIETY, 57, PARK STREET.
1906.

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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL

New Series.

Vol. 1.—1905.

Four new Copper-Plate Charters of the Somavaṃśī Kings of Kośala (and Kaṭaka ?).—*By* GANGA MOHAN LASKAR, M.A.

These four charters, each consisting of three copper-plates, were sent a few months ago from the Pāṭnā State in the Central Provinces to the Asiatic Society of Bengal, and the task of deciphering them was entrusted to me. They form an addition to the series of six charters of the Somavaṃśī Kings edited or re-edited by Mr. Fleet in the Epigraphia Indica (Volume III, pages 323 to 359). Four of the published charters were granted by Mahā-Bhavagupta I, one by Mahā-S'ivagupta and the last by Mahā-Bhavagupta II. Of the four new charters one belongs to the first and the remaining three to the second of these kings. Thus we now possess five land-grant charters of Mahā-Bhavagupta I, four of his son Mahā-S'ivagupta and one of the latter's son Mahā-Bhavagupta II. A copper-plate charter granted by Puñja, a feudatory chief under Mahā-Bhavagupta II, in the 13th year of the latter's reign, has been edited by Dr. Kielhorn in Epi. Indica, Volume IV. (page 254, &c.).

The language and forms of expressions of the new charters are much the same with those employed in the old ones. The characters in which they are inscribed are the same. They do not bring out any new important facts about the history or the identification of the grantors, except the names of the villages granted and a few other minor details scarcely worthy of notice. The historical and palæographical remarks made by Mr. Fleet on the old records apply equally to the new ones. Yet a few words may not be unnecessary to serve as an introduction to the account of the newly-discovered copper-plates given in the following pages.

Mr. Fleet calls his charters as A, B, C, D, E and F; the new ones may be named G, H, I and J respectively. These ten charters, together with the one granted by Puñja, are the only records that we possess of this dynasty. They disclose to us the names of four successive kings, *viz.*, (1) S'ivagupta, (2) Mahā-Bhavagupta I *alias* Janamejaya, (3) Mahā-S'ivagupta *alias* Yàyāti, and (4) Mahā-Bhavagupta II *alias* Bhīmaratha. Each of the first three was the father of his successor. They call themselves as members of the Somakula (lunar race) and as the 'lords of the three Kaliṅgas.' They grant lands in the different districts of the Kośala country. In the grants B, C and D, issued in the thirty-first year of his reign, Mahā-Bhavagupta is referred to by the title Kośalendra (lord of Kośala). Charter J is said to have been written by a clerk of the office of the 'minister for peace and war' of the Kośala country. These facts prove beyond doubt that these kings ruled over the Kośala country, or at least a part of it. About five of the copper-plate charters were found in the Native State of Pāṭnā in the Central Provinces, and the remaining five in the neighbourhood of Kaṭaka (or Cuttuk). The charters of Mahā-S'ivagupta and his son are issued from Vinītapura and Yayātinagara, towns or a town on the Mahānadī river. The village granted by the charter E is said to be situated in Dakṣiṇa-Tosalā* which may be a mistake for Dakṣiṇa-Kośalā or Southern Kośala. These facts show that it was Dakṣhina-Kośala (or southern Kośala), identifiable with the south-eastern parts of the Central Provinces, which was included in the kingdom of these kings.

Mr. Fleet thinks that these kings ruled over Orissa also and had their capital at Kaṭak (Cuttack), and that both Vinītapura and Yayātinagara, the issuing places of the charters of Mahā-S'ivagupta and his son, were identical with it. His view is based upon the word "Vijaya-kaṭaka," which is applied to the issuing places of Mahā-Bhavagupta I's charters. He considers it to be a proper name denoting the modern town Cuttuk. The collocation of words in which the term occurs would suggest another meaning. The expressions **मूरसीमसमावासितश्रीमतो विजयकटकात्** and **आरामसमावासित-**

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* The word Tosalī as the name of some country in or near Orissa is as old at least as the third century B.C. The two separate edicts of Asoka found in the version of Dhauli in Orissa are addressed to the officials at Tosalī. The expressions "Ubhaya Tosalyāṃ" (*i.e.*, in both divisions of Tosalī) and "Dakṣiṇa Tosalyāṃ Frāṅga (doubtful) viṣaye" (*i.e.*, in the Frāṅga *viṣaya* or district in Southern Tosalī) occur in an old copper-plate grant found in some Native State in Orissa. It is written in the old Gupta characters and cannot be of a date later than the 5th Century A.D. It is clear from the above that Tosalī was a country very near to, if not comprised in, the possessions of the Somavaṃśī kings under notice. So we cannot be free from doubt when we take Dakṣiṇa Tosalā as a mistake for Dakṣiṇa Kośala (Southern Kosala). Only two small fragments of the plate mentioned above were found. The inscription was very sadly damaged. The name of any king could not be found. The few words that could be satisfactorily deciphered convinced me that it was certainly a land-grant charter. A seal was received with the above fragments. It was circular in shape and had a diameter of two-and-a-half inches. One face of it contained in its upper half a female figure, seated on a lotus, with two elephants (one on each side) having their trunks uplifted over her head. This emblem is similar to that found on the seals of the Somavaṃśī kings under notice. There was a line of writing below the emblem, but it was too much damaged to be diciphered.

श्रीमतो विजयकटकात् would, as they stand, mean 'from the glorious camps of victory pitched at Murasīma and Ārāma, respectively,' or "from the camps of victory of the glorious king (**श्रीमतो**) who was residing at Mūrasīma and Ārāma, respectively." Mr. M. M. Chakravarti, who assigns the charters to the 12th century rather than to the 11th as done by Mr. Fleet, objects to Mr. Fleet's interpretation of the term and considers that these kings could not rule in Orissa, for at that date kings of the Gaṅgāvaṃśa dynasty were masters of that province.

The title Tri-Kaliṅgādhipati (lord of the three Kaliṅgas) used by these kings requires a little consideration. The word Tri-Kaliṅga is a vague term to us. But it seems to be sure that it included the whole of Kaliṅga with at least a few districts in the neighbourhood. Now Kaliṅga was a strip of country between the sea-coast and the Eastern Ghats. It extended to about Vizagapatam in the south. Its northern limit is said in the Mahābhārata to be the river Vaitaranī (mod. Byterni), which river and the Kaliṅga people the Pāṇḍavas are described to have reached at the same time on their southward progress from Bengal in the course of pilgrimage. According to this account, Kaliṅga would include a considerable portion of Orissa. But the limits of countries fluctuated from time to time and there is no certainty that the same river was the northern boundary of Kaliṅga also at the time of the inscriptions under notice. Be that as it may, we find in these inscriptions some points which would indicate that Kośala was included in the countries known as Tri-Kaliṅga (or the three Kaliṅgas). The grantors of these charters have the title Tri-Kaliṅgādhipati attached to their names, but not the title Kośalendra (lord of Kośala), although they were undoubtedly the masters of the Kośala country. Indeed, by the latter title Mahā-Bhavagupta I is referred to in charters B, C and D. But this title is not used along with their names nor is it joined to the title Tri-Kaliṅgādhipati, which is almost invariably prefixed to their names. This seems to show that the title Tri-Kaliṅgādhipati was thought sufficient by these kings to imply their possession of Kośala also. It is therefore probable that Kośala, (*i.e.*, Southern Kośala) was included in Tri-Kaliṅga (three Kaliṅgas). Thus we see that they possessed at least a part of Tri-Kaliṅga and therefore the title Tri-Kaliṅgādhipati was not altogether an honorific one as thought by Mr. M. M. Chakravarti. I do not mean to say, however, that the whole of Tri-Kaliṅga was under their rule. That these kings held sway over what is now called the Pāṭnā State is certain. Two of *the viṣayas* or districts are called Telātaṭṭa and Oṅgātaṭa (see Table). These names imply that they were on the banks of the Telā (Mod. Tel) and the Oṅgā (Mod. Ong) river. These rivers flow across the Pāṭnā State into the Mahānadī and are found on the maps. Hence the Pāṭnā State or a considerable part of it formed part of their kingdom.

If Mr. Fleet's identification of Vinītapura and Yayātinagara with the town of Kaṭak (Cuttuk) be correct, we may notice this fact. The issuing places of Mahā-Bhavagupta I's charters are described as विजय कटक । The charters granted in the 8th and 9th years of his son Mahā-S'ivagupta (Yayāti) are issued from Vinîtapura; while the charters granted in the 24th and the 28th years of the latter's reign and the one granted by his son are issued from Yayātinagara. Taking Mr. Fleet's view to be correct, we may say that Mahā-S'ivagupta, who was otherwise called Yayāti, changed the name of his capital and called it after his own name as Yayātinagara ('city of Yayāti'), and his son also continued the new name.

No grants of S'ivagupta, the first king, has come down to us. He is not called Trikaliṅgādhipati, nor is the word Mahā (the Great) prefixed to his name. This shows that the powers and possessions of this dynasty were increased by Mahā-Bhavagupta I. His son Mahā-S'ivagupta is said in one of the eulogistic verses to have defeated Ajāpāla (a king probably) in battle and to have captured thirty-two big elephants. From the third plate of Charter H, which is the worst executed of the charters, it appears that he defeated the *Cedis* and devastated their country (Ḍahālā).

I have made a tabular abstract of the whole series of ten charters. This will facilitate their comparative study and will save the trouble of going through the records themselves. The abstract is appended with this paper.

Some Details common to the new Charters (G, H, I, and J).

As already stated, they were found somewhere in the Native State of Pāṭnā attached to the Sambalpur district in the Central Provinces. Each charter consists of three plates strung together by a thick ring, the ends of which are joined in a circular seal. The seal bears in relief a seated female figure with two elephants with uplifted trunks. Other details of the seals cannot be well distinguished owing to the rust that has accumulated upon them. The inscriptions are on both sides of the middle plate and on the inner sides of the first and the third plate. In J, the inscription extends to the outer side of the third plate. The characters employed are Nāgarī of the northern type and belong to that particular variety of it to which the name of Kuṭila has come to be applied. The engraving is usually deep and legible; the letters do not usually show through on the opposite sides of the plates. The language employed in these records is Sanskrit; and except for the benedictive, imprecatory and eulogistic verses, they are generally in prose throughout. A point of orthography common to all these records is the use of *v* for *b*.

G.—Pāṭnā Copper-Plate Grant of the 6th year of Mahá-Bhavagupta's reign.

The plates, the ring and the seal together weigh 2 seers and 12½ chhataks (*i.e.*, a little more than 5½ lbs.). Each of the plates measures about 7⅞″ by 5″. The ring is about half an inch in thickness and 4″ in diameter. The seal is 1⅞″ in diameter. In relief on a countersunk surface it shows a seated female figure, perhaps of the goddess Lakṣmī, with two elephants. The plates are almost smooth; only the middle one and a side of another have their ends raised into rims to protect the writing. The inscription, which is deep, is in a state of perfect preservation. Although the engraving is deep, the letters do not show through on the reverse sides of the plates as the latter are substantial. The characters are 'Kuṭila.' They include forms of decimal figures for 6, 13 and 5 in lines 42, 43 and 46 respectively.

The *avagraha* does not occur in this record. Final forms occur of *t* in *Kaṭakāt* (line 1), *vaset* (line 24), *dadyāt* (line 26), *Samvat* (line 42); and of *n* in *ādīn* and *sarvvān* (line 7), in *etān* and *pārthivendrān* (line 37). The language is Sanskrit, and except for the benedictive and imprecatory verses from lines 20 to 40, the whole record is in prose. The rules of Sandhi are neglected in several places. There are several spelling mistakes which must have been due to the Kāyastha (or clerk), *e.g.*, **कूषलौ** , **त्रकलिङ्ग** , the use of *ū* for *u* and several others. The average size of the letters is about ⅜ of an inch. *V* is used for *b* throughout. *R* is used for *l* in pravarggayanti in line 27.

This charter is the second of the two (A and G) issued in the 6th year of Mahā-Bhavagupta's reign. In lines 16 and 17, the village granted is said to have been made revenue-free (**अकरीकृत्य**); yet in the concluding two lines a nominal revenue of five silver coins a year seems to be fixed as the king's share. The charter is moreover called in line 45 to be a revenue-charter (Kara-S'āsanam). Charter A also conveys lands subject to a similar yearly payment. In lines 19 and 20, we find the expression "*prativarṣa-dātavya-rūpyakāṣṭapalakaradānaṃ viniscitya.*

Abstract of the Contents of G.

From the victorious camp located at Murasīma [or from the victorious (city of) Kaṭaka]—

[ll. 1-4] The most devout worshipper of (the god) Mahesvara, the Paramabhaṭṭāraka, the Mahārājādhirāja, the ornament of the Somakula, the lord of the three Kaliṅgas, the Paramesvara, the glorious Mahā-Bhavagupta-râjadeva, who meditates on the feet of the Paramabhaṭṭāraka, the Mahārājādhirāja, the Paramesvara, the glorious

[ll. 4-5] S'ivaguptadeva, ["being in residence at Murasîma," (this is to be put here if the interpretation of the description of the place of issue given above in the 1st line of the Abstract be objected to)], being in good health and having done worship to the Brāhmans of the Pāsītalā village in the Potā district (viṣaya),

[ll. 5-8] issues this command to the cultivators and other inhabitants of the village as well as to all the dependents of the king who may be living from time to time in that district, such as the Samâhattṛs, &c.

[ll. 8-18] "Be it known to you that for the increase of the religious merit and glory of our (श्रीदैव मातापित्रोः) *godly parents* as well as of our own selves, this village,—with everything included within its four boundaries, with its hidden treasures and deposits, with the freedom from all lets and hindrances, with the power to receive all extra cesses, with its ditches and deserts, with the exemption from the entrance into it by regular and irregular troops—is granted by us with libations of water, after being made revenue-free—to be enjoyed as long as the moon, the stars, the sun and the earth endure,

[ll. 11-14] to Bhaṭṭaputras (S'rī) Keśava and (S'rī) Apya, sons of Bhaṭṭa Dāddī, belonging to the Kauśika *gotra*, with the *pravaras* Audala, Devarāta and Viśvāmitra, students of the Kāṇva *śākhā*, immigrants from Kommāpīra and inhabitants of Loisṛgā.

[Ll. 17-18] Knowing this you should live in happiness, rendering unto them (the donees) the taxes, gold and other shares of their enjoyments.

[Ll. 18-40.] In these lines are contained the mandate to future kings for the preservation of the grant and the usual imprecatory and benedictive verses (for which see the translation of J.). [Ll. 40-46]. This charter was written by Kāyastha Koighoṣa, son of Ballabhaghoṣa and a writer attached to the office of the Mahāsāndhivigrahin Malladatta, son of Dhâradatta, on the thirteenth *tithi* of the bright fortnight of the month of Kārtika in the sixth year of the victorious reign of Paramabhaṭṭāraka, Mahārājādhirāja, the Parameśvara, the glorious Janamejayadeva. Or (dated) in figures, Saṃvat 6, Kārtika sudi 13. This revenue-charter is granted after the fixing of the yearly revenue as five silver coins.

H.—Pāṭnā Copper-Plate Grant of the 8th year of (Yayāti) Mahā-S'ivagupta's reign.

The weight of the plates, the ring and the seal together is 3 seers and 6 chhataks (or about 7*lbs*). Each of the plates measures 8″ by 5½.″ The ring is 4½″ in diameter. The usual device on the seal is visible. The interiors of the letters show marks of the working of the engraver's tools. The engraving is deep; but it has been done with extreme haste and carelessness, so that many letters and sometimes whole words have been omitted through mistake. The record is full of spelling mistakes and other gross inaccuracies. The material is very soft; so that the edges of the engraved lines have been pressed up considerably above the surface of the plates. For these reasons it has not been possible to read the record completely and in certain parts, especially towards the end, the meaning has remained obscure. The characters include decimal figures for 8 and 13 in lines 39 and 40 respectively. The *avagraha* occurs in यशोऽभिवृद्धये in line 13.

Abstract.

It is issued from Vinitapura. The place of issue is mentioned in the words (Vinitapurāt Kaṭakāt), which incline one to Mr. Fleet's view about the identification of Vinītpura with Cuttak; for the word 'Kaṭakāt' looks as if it were in apposition with Vinītapura. The words may, under this view, be translated as "from Vinītpura, which is Kaṭaka." .

This inscription purports to convey lands on the northern part of the Dāśānarīya river (or the river of the Daśārṇa country), belonging to the village Talakajja in Sanulā (or Sanṛlā) *Viṣaya* (district) in the Kośala country—to a Brāhmaṇa, named Kāmadeva, grandson of Harṣa and son of Narasiṃha, an immigrant from Māddhila and a resident of Jalajaḍḍa in Kośala, having the *pravaras* Gotrapa, Kasyapa, Vatsa and Naidhruva, and a student of the Mādhyandina *Sākhā* of the Vājasaneya (Saṃhitâ).

Lines 15-36 contain the usual injunction to future kings with the benedictive and imprecatory verses about the merits of the preservation and the demerits of the confiscation of granted lands.

Lines 36-41 tell us that it was written by Uccavanāga (or Utsavanāga ?), the *Utthitāsani* (?), son of Samamphenāllava (?), by the command of the *rāṇaka* Dhāradatta, the Mahā-Sāndhivigrahin, in the 8th year of the victorious reign of Yayātideva, and that it was engraved by Vijñānī Mâdhava, son of Vāsu.

Lines 40-42 contain a verse setting forth the transitoriness of life and its pleasures and enjoining the preservation of the good works of others. The next lines are very obscure. They speak of a powerful Kosala king of the Somavaṃśa (referring probably to Mahā-S'ivagupta himself) who defeated probably the *Cedis* (**चोद्यान** may be a mistake for **चैद्यान्**). The last two words of the record speak of the devastation of some place, probably *Dāhala* or the *Cedi* country ("**डहाणा विजनाश्चकार** "made Dahāṇā or Dāhala uninhabited"). The same king probably was the author of the devastation.

I.—Pāṭnā Copper-Plate Grant of the 24th year of Yayāti-Mahā-Sivagupta's reign.

Each of the plates measures 8½″ by 6½″. The ring is 5½″ in diameter. The diameter of the seal is 2¼″. It contains the usual female figure. The weight of the plates, the ring and the seal together is 4 *seers* and 5 *chataks* (or nearly 9℔). The characters includes decimal figures for 24 and 5 in line 62. The *virāma* occurs in **चारात्** (l. 12), **तस्मात्** and **नगरात्** in line 13, and in **वल्लभाद्दीन्** in line 24. It is mistakenly omitted in **एतान्** and **न्द्रान्** in lines 56 and 57 respectively. Final forms occur of *n* in **प्रवाहान्** (l. 18) **रद्दान्**, **संज्ञान** (l. 19) and **करीन्द्रान्** (20); and of *m* (**म**) with a *virama* below in **उत्कौरितम्** in the last line. The *avagraha* occurs wrongly in **जित्वाऽजापालम्** in line 19 and correctly in **पुण्ययशोऽभिवृद्धये** in line 38. The average size of the letters is ⅜ of an inch. As for the orthography, we may notice the use of *ṅ* (**ङ**) for *anusvāra* in **चतुर्विङ्शति**

in line 61 and the use of *n* (न) for *anusvāra* in **ध्वन्मु** in line 9. *V* is used for *b* as usual in these records.

The wordings of the present record are almost identical with those of J. Both the donor and the donee are the same persons with those in charter J. Both these charters were issued from the same place Yayātinagara. The only difference lies in (1) the names of the villages granted. (2) the names of the writers and engravers and (3) in the dates. The present charter does not contain the verse in praise of the Sāndhivigrahin (who is however a different person here) which is found in J toward the close.

This charter purports to convey the (lines 25-26) village of Ḍelāḍelī in the Telātaṭṭa *viṣaya* in the Kosala country to Bhaṭṭa-Mahodadhi.

[Ll. 59-64].—"This charter was written by the *Kāyastha* Tathāgata, a writer belonging to the office of the Mahāsāndhivigrahin, the *Rāṇaka* Dhâradatta, on the fifth *tithi* of the bright fortnight of the month of Aṣāḍha in the twenty-fourth year of the prosperous and victorious reign of..........the glorious Yayātideva." It was engraved by *Vijñānī* Vāsuka.

For the translation of this record, reference is made to the translation of J, with which it is identical in almost all parts.

J.—Pāṭnā Copper-Plate Grant of the 28th year of Yayāti-Mahā-Sivagupta's reign.

Each plate measures 9½″ by 7.″ The ring is slighty above ½″ in thickness and is 4¾″ in diameter. The diameter of the seal is 2⅛.″ It contains the usual female figure, etc. The weight of the the whole is 4 *seers* and 5 *chataks* (or about 9 lbs). The inscription extends to a portion of the outer side of the third plate. The average size of the letters is about ⅜″. The engraving is good and fairly deep; but the plates being substantial the letters do not show through on the reverse sides, except very slightly on the outer side of the first plate. Final forms occur of n (न) in **श्रीमान्** (line 14), **प्रवाहान्**, **कुम्भान्**,—**रदान्** (line 22), **करीन्द्रान्** (line 24), **एतान्** (line 63) and-**न्द्रान्** (line 64) and of (**म**) *m* in **उत्कीरितम्** (line 75), in which last instance the *virāma* is put below it.

The final form of *t* (त) is found in the following ligatures:—**त्सौ** (line 12), **त्प** (in line 18), **त्क** (in line 24), **त्स** in (line 73). The *virāma* occurs in **चारात्** (112); while in several cases it has been omitted through mistake: *e.g.*, in **भाद्रीन्** (line 32), **तस्मात्**, **नगरात्** (line 13) and **दिक्** (line 14). The *avagraha* occurs incorrectly in **जित्याऽजापाम्** and correctly in **राज्येऽष्टाविंशतितमे** (line 73). As regards the orthography: we may notice that **ताम्ब्र** is written for **ताम्र**, and **सिङ्ह्दत्त** for **सिंहदत्त** । The use of *v* for *b* is usual.

As this record is the longest of the four charters under notice; I give its full translation, to which reference is made for the meaning of the rest.

FULL TRANSLATION OF J.

[L. 13] Oṁ Hail! From that glorious town of Yayātinagara,—

[L. 1-4] —where the enjoyment of love is being continually intensified and still more intensified by the close embraces (of lovers), by which fatigue is removed, in which hissing sound often appears and in which hairs often stand on their ends, although such enjoyment suffers interruptions as the ardent young couple show their skill in the various processes of conjugal enjoyment with their eyes dilated (with excitement) and with their minds subdued and fascinated by amorous thoughts;

[Ll. 4-7.]—where, even in the midst of quarrels arising from jealousy, lovers, beaten by lotuses from the ears of women who have cast the beauty of the celestial damsels into shade by the greatness of their endless and peculiar charms, have all their mental anguishes roused to action by the entrance of the sharp arrows of Cupid, with their hairs standing on the ends (*lit.* sprouting up) on account of the sprinkling of the drops of sweat (from the persons of the objects of their love);

[Ll. 7-11.] —where, at the tops of houses beautifully whitewashed, the places of assignation of unchaste women and their pearl ornaments were whitened by the clusters of rays issuing from the club-like tusks of very lofty elephants—the rays which rendered the autumn moon useless in the matter of dispelling darkness;

·[Lines 11-13] (and) where the fatigue of the women enjoying conjugal caresses with ardent attachment is removed by the breezes surcharged with the particles of water sent up by the breaking and swelling of the high waves of the Mahānadī.

[Lines 13-16] There was on the earth a beautiful king named Janamejaya, who had a pure and mild appearance and a lotus-like face, who had subjugated by the force of his arms all his enemies, and whose spotless fame, well known throughout the three worlds, covered the eight quarters like a canopy.

[Lines 16-18] From him sprang King Yayâti, whose glory was sung in all the three worlds, who defeated his enemies with contempt as it were, and whose sword had its sharp edge made rugged with the pearls coming out of the foreheads of the elephants rent asunder by it;

[Ll. 18-21.] whose sword rent asunder with its point the foreheads of a large number of elephants, from which heaps of pearls came out and adorned the bosom of the damsel of the earth in every battle; the dusts of whose lotus-like feet, as pure as the rays of the gems in the head-dresses of kings constantly bowing down at his doors, assumed, through equality, the lustre of these (*i.e.* the gems);

[Ll. 21-24.] who, having defeated Ajāpāla in battle, astonished the heavenly damsels by capturing alive with a smiling face, thirty-two big elephants, named Kâmadeva, etc., whose riders had been killed,—elephants who had sharp and huge tusks and whose temples were discharging *ichor* and therefore abounded with flocks of greedy bees getting intoxicated (by draughts of the fragrant fluid).

[Ll. 26-29.] The most devout worshipper of (the god) Maheśvara, the Paramabhaṭṭāraka, the Mahārājādhirāja, the Parameśvara, the ornament of the Somakula, the lord of the three Kaliṅgas, the glorious Mahâ-S'ivagupta-rāja-deva, who meditates on the feet of

[Ll. 24-27] the most devout worshipper of (the god) Maheśvara, the Paramabhaṭṭāraka, the Mahārājādhirāja, the Parameśvara, the ornament of the Somakula, the lord of the three Kaliṅgas, the glorious Mahā-Bhavaguptarājadeva,

[Ll. 29-33] being in good health and having done worship to the Brāhmans of the district at the village of Lluttarumā of Telātaṭṭa *Viṣaya* or district in Ṣaṇṇavati, issues a command to all the dependants of the king such as the *samāhatṛs* (समाहर्तृ),* the *sannidhātṛs* (सन्निधातृ), the *Niyuktādhikārikas* (नियुक्ताधिकारिक), the *Daṇḍapāśikas* (दण्डपाशिक), the *Piśunas* (पिशुन), the *Vetrikas* (वैत्रिक), the *Avarodhajanas* (अवरोधजन), the *Rāṇakas* (राणक), the *Rājaballabhas* (राजवल्लभ) &c. (in the following words) :—

[Lines 33-43]. "Be it known to you that for the enhancement of the religious merit and glory of ourselves and our parents, this village, extending to its four boundaries—with its hidden treasures and deposits, with the right to fines for the ten offences, with the freedom from all lets and hindrances, with the right to mango-trees and honey-combs, with its ditches and barren lands, with its lands and waters, with the privilege that it shall not be entered into by the regular and irregular troops—is, by a copper-plate charter, granted by us as revenue-free, with libations of water, to be enjoyed as long as the moon, the stars, the sun and the earth exist,

[Lines 37-40] to Bhaṭṭa Mahodadhi, son of Siddheśvara and grand-son of Parameśvara, an inhabitant of Ntaraḍī in the Lāvaḍā district (*viṣaya*), an immigrant from Kāsilî in the Srāvasti *Maṇḍala*, a member of the *Kauśika gotra*, with the *pravaras* Devarāta, Audala and Viśvāmitra and a student of the Gautama *śākhā*.

[Lines 43-44]. Being aware of this, you should dwell in happiness rendering unto him the rents and other shares of enjoyment due to him."

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* समाहर्तृ—(*Lit.* those who collected). Prob. purveyors or collectors of revenue.

सन्निधातृ—Those whose duty was to keep near. Prob. Usherers.

नियुक्ताधिकारिक—Those in charge of the Appointment Department.

दण्डपाशिक—Those whose duty was to punish the wrong-doers.

पिशुनक—Spies.

वैत्रिक—Lit. an officer who held a cane. Prob. Chamberlain.

अवरोधजन—Officers employed at the harem.

राणक—Probably a title of high distinction.

राजवल्लभ—Favourites of the king.

This my grant should be preserved like their own grants by future kings also, from a regard for religious laws and my own earnest request.

L.46. Thus it is said in religious books :—

[Lines 48-49]. Land has been given by many kings commencing with Sagara ; whoever at any time possesses the earth, to him at that time the reward accrues.

[Lines 49-50]. The giver of land enjoys happiness in heaven for 60,000 years ; while both the confiscator and the person who acquiesces in so doing go to hell.

[Lines 51-52]. Gold is the first offspring of fire ; the earth is the daughter of Viṣṇu ; and the cows are born of the sun. He who gives gold and cows and lands, by him, by that act, are given all the three worlds.

[Lines 52-54]. Fathers (in the world of the dead) clap their hands upon their arms, and grand-fathers leap from joy, saying, "A giver of land has been born in our family ; he shall become our deliverer."

[Lines 54-55]. Both the giver and the receiver of land are doers of meritorious works and will certainly go to heaven.

[Lines 55-56]. A confiscator of (gifted) lands is not purified even by the excavation of a thousand of tanks, by the performance of a hundred of *vājapeya* sacrifices and by the gift of a crore of cows.

[Lines 56-57]. He who steals a piece of gold or a cow or even half-a-finger's breadth of land is consigned to hell till the destruction of the world.

[Lines 57-59]. That ignorant fool who confiscates or causes the confiscation of lands is, being tightly bound in the fetters of Varuṇa, reborn of lower animals.

[Lines 59-60]. He who confiscates lands given by himself or others becomes a worm in the ordure and stinks there with his ancestors.

[Lines 61-62]. The sun, Varuṇa, Viṣṇu, Brahmā, Soma, the god of fire and the great god S'ūlapāṇi welcome the giver of land (as he goes to heaven).

[Lines 62-63]. Rāmabhadra again and again requests all the future kings, saying, "This bridge of religion is common to all men ; it is to be observed by you in all times."

[Lines 64-66]. Thinking that wealth as well as human life are as unstable as a drop of water on the leaf of a lotus and understanding all that has been said above, men should not destroy the good works of others.

[Lines 66-69]. He who surpassed the preceptors of the kings of the gods and of the demons (*i.e.*, Vṛhaspati and S'ukrācārya) in wisdom and pride, who bore with perfect ease the heavy burden of the state affairs imposed by the king and who had both policy and prowess as his dear and constant friends,—that fortunate person of the name of (S'rī) Singhadatta (Siṃhadatta) was the holder of the post of "the minister of peace and war." (सन्धिविग्रहपद)

[Lines 69-71]. This charter, written by Kāyastha Sūryasena belonging to the office of (or a servant of) the 'minister of peace and war' of the Kosala country, is to last as long as the moon, the sun and the stars endure.

[Lines 71-74]. On the fifth *tithi* in the bright fortnight of the month of Bhādrapada in the 28th year of the victorious reign of the most devout worshipper of (the god) Maheśvara, the Mahārājādhirāja, the Parameśvara, the ornament of the Somakula (lunar race), the lord of the three Kaliṅgas, the glorious Yayātideva. Or, in figures, Saṃvat 28, Sudi 5.

[Lines 74-75]. Engraved by *Vināli* (Vijñanī) Madhumathana.

[Transcriptions of all the following charters are from the original plates.]

G.

FIRST PLATE.

[1] ॐ स्वस्ति । मुरसिमसमावासितश्रीमतो विजयकटकात् पर[-]
मभ[-]

[2] ट्टारकमहाराजाधिराजपरमेश्वरश्रीशिवगुप्तदेवपादानुध्यात पर[-]
ममा[-]

[3] हेश्वर परमभट्टारकमहाराजाधिराजसोमकुलतिलकट[1]कलिङ्गा-
धिप[-]

[4] ति परमेश्वरश्रीमहाभवगुप्तराजदेवः ।[2] कुष[3]ली ।[4] पोताविषय[-]
प्रतिबद्धपा[-]

[5] सितलाग्रामे ब्राह्मणां[5] स[6]पूज्य तत्प्रतिनिवासिकू[7]टुम्बिजनपदा[ं]-
स्तद्विषयी[-]

[6] ययथाकालाध्युसिनः समाहट सन्निधाट दाण्डपाशिक चाट भट[-]

[7] पिसून[8] वेत्रिकावरोधजनराजवल्लभादीन् सर्व्वान् राजपादोपजी[-]

[8] विनः समाज्ञापयति विदितमस्तु भवतां यथास्माभिरय[ं] ग्रामः

[9] सनिधिः सोपनिधिः सर्व्वबाधाविवर्जितः सर्वोपरिकरकरादानस[-]

[10] हितः साम्रमधुकः सगर्त्तो[ऽ]षरः प्रतिनिषिद्धचाटभटप्रवेशस्तु[ः-]

N.B.—The letters and signs enclosed within brackets [ ] are supplied by me.

[1] Read त्रि. [2] This mark of punctuation is unnecessary.

[3] Read कुशली. [4] This mark of punctuation is unnecessary.

[5] Read ब्राह्मणान्. [6] Read संपू. [7] Read कुट. [8] Read श.

[11] [1]सिमापर्य्यन्तः श्रौकिग्रकगोत्राभ्यां ादलदेवराज[2]विश्वामित्रप्रव[-]

[12] राभ्यां काण्वशाखाध्यायिभ्यां कोम्मापिरविनिर्गताभ्यां लोड[-]

[18] ष्टङ्गावास्तव्याभ्यां भट्टपुत्रश्री[-]

SECOND PLATE (*a*).

[14] केशवश्रीअप्पाभ्या[ं] भट्टदाद्दीस्[3]ताभ्या[ं] सलिलधारा[4]पूरः[-]

[15] सरमाचन्द्रतारकार्क्कक्षितिसमकालोपभोगार्थः श्रीदेवमाता[-]

[16] पित्रोरात्मनश्च [5]पूण्ययशोऽभिवृद्धये [6]त्राम्रशासनेनाकरीक्व[-]

[17] त्य प्रतिपादित इत्यवगत्य समुचितभोगभागकरहिरण्यादि[-]

[18] कमुपनयद्भिर्भवद्भिः सुखेन प्रतिवस्तव्यमिति । भाविभिश्च भूप[-]

[19] तिभिर्दत्ति[7]रीयमस्मदीया धर्म्मगौरवादस्मदनुरोधाच्च स्व[-]

[20] दत्तिरिवानुपालनीया तथाचोक्त[ं] धर्म्मशास्त्रे ।

Here follow the usual verses, being thirteen in all. Twelve of these occur in Plate A (*see* Epi. Ind. III, p. 343), and for the remaining one, *see* transcription of Plate J, lines 56-57, सुवर्ण &c. The last of these verses end in the words कीर्तयः विलोप्याः ।

THIRD PLATE. [11. 36-46.]

[40] कीर्त्तयः विलोप्या इति परमभट्टारकमहाराजाधिराजपरमेश्व[-]

[41] र श्रीजनमेजयदेवस्य विजयराज्ये सम्वच्छरे[8] षष्ठे ॥[9] कार्त्ति[-]

[42] कमाससितपक्षत्रयोदश्यां यत्राङ्कतः सम्वत्[10] ६ कार्त्तिक सुदि

[48] १३ लिखितमिदं शासनं महासान्धिविग्रहिश्रीमल्लदत्तश्रीधारद[-]

[44] त्तसुतप्रतिबद्धकायस्थकोइघोषेण वल्लभघोषसुतेन । प्रतिव[-]

[45] र्षं चात्र शासने करपञ्चरूप्यकाणि निष्कृष्य करशासनमिदं

[46] दत्तं यत्र रूप्य ५

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[1] Read सौ [2] Read त. [3] Read सु. [4] Read पु. [5] Read पु.
[6] Read ता. [7] Read रि. [8] Read संवत्सरे. [9] This mark of punctuation is unnecessary. [10] Read संवत्.

H.*

FIRST PLATE.

[1] [1]ॐ स्वस्ति । श्रीविनि[2]तपू[3]रात् कटकात्पर[म]माहेस्व[4]रपरमभ[-]

[2] ट्टारकमहाराजाधिराजश्रीमहाभवगुप्तराजदेवपा[दा]नू[5]ध्यायी ।

[3] परममाहेस्व[6]र परमभट्टारकमहाराजाधिराजपरमेस्व[7]रसो[-]

[4] मकू[8]लतिलकत्रिकलिङ्गाधिपतिश्रीमहासि[9]वगू[10]प्तराजदेवः
कू[11]स[12]

[5] ली:[13] कोसलदेशे[14] । सनूलाविषयीय तलकज्जग्रामसम्बन्धी

[6] तु[15]रदाशानरीयनदीसमेतभूमि स्वतुःशी[16]मयाच्छिप्रे[17]

[7] वतः   ब्राह्मणान्सम्पूज्य च द्विषयीयः

[8] निषिद्धचाटभटप्रवेशकस्य । गोत्रपकश्यपा[18]वत्सानैध्रु[व]प्रव[-]

[9] राय ।[19]वादशेनमध्यन्दिनशा[ा]खाध्यायी[20]ने । माध्वीलविनि[र्ग]ताय

[10] कोसलजलजडुवास्तव्याय । श्रीकामदेवनाम्ने । हर्षनत्रे न[-]

[11] रसिंहसुताय [सलिलधारा] पू[21]रःसरमाचन्द्रतारकार्क्कक्षितिसम-
कालोपभो[-]

[12] गार्थं मातापित्रोरात्मनश्चपुण्ययशोऽभिवृद्धये ताम्रशासनेना[-]

[18] करीकृत्य प्रतिपादी[22]त इत्यवगत्य यथादीयमानकरहिरण्य[-]

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* This record is quite full of mistakes and omissions. The short *u* is almost throughout expressed by the long one. In the footnotes only the most salient mistakes are corrected.

[1] We have both the plain symbol as well as the letter for ॐ.

[2] Read नी. [3] Read पु for पू. [4] Read श्व. [5] Read नु।

[6] Read श्व. [7] Read श्व. [8] short u for long ū.

[9] Read शि. [10] Read short u for long ū. [11] Read short u for long ū.

[12] Read श. [13] Omit the *visarga*. [14] This sign of punctuation is unnecessary. [15] "तुर" These two letters are doubtful, and may also be read नर, न्तर. [16] Read सी। [17] Should probably be corrected to प्र

[18] Omit the sign for long ā. Probably the next word should be वात्स्य.

[19] Should be वाजसनेयमाध्यन्दिन- । [20] Read यि. [21] Read पु.

[22] Read दि.

SECOND PLATE (*a*).

[14] भोगभागादिकं ददद्भीः[1] भवद्भिः सुखेन प्रतिवस्तव्यमिति । भाविभिश्चभु[-]

[15] पतिभिर्द्दत्ति[2]रियमस्मदीया धर्म्मागौरवादस्मदनुरोधाचस्वदत्ति[3]रि]

[16] वानुपालनीया । तथाचोक्तं धर्म्मशास्त्रे

Here occur the same thirteen verses as are found on Plates G and are referred to after l. 20 of the transcripts of G. Lines 16-35 are as full of spelling mistakes as the rest of this charter (H).

SECOND PLATE (*b*). [11. 28-40.]

[35] परममाहे[-]

[36] श्वरपरमभट्टारकमहाराजाधिराजपरमेश्व[4]रसोमकुलति[-]

[37] लकत्रिकलिङ्गाधिपतिश्रीमद्ययातिदेवराजस्य विजयराज्ये सा[5]म्व[-]

[38] त्सराष्टमे म[6]र्ग्गशिरमासे शुक्लपक्षे त्रयोदश्या[7]मङ्के सम्बत्[8] ८

[39] मार्ग्गं सुदि १३ लिखितमिदं ताम्रशासनं महासन्धिविग्रहिराण[-

[40] कश्रीधारदत्तस्मा[9]वगतेन । उत्त्ति[10]तासनीश्रीउच्छवणागस

THIRD PLATE.

[41] मम्फेणाल्लवसुतेन । उत्किस[ ] विज्ञानी माधवेन[11] वासुसुतेनेति । सम्बा

[42] दोजलजपर्संजलाभाजीवितं मरणसन्ततिसंस्थं भोगभुक्तीरतिनां

[43] प्रविलोक्याः कीर्त्तयो नृपतिभिर्नविलोप्या इतिः । सोभू नृपः सो[-]

[44] मकुलाजभानुः स्वभावतुङ्गो निजपौरुषेण । यः कोसला

[45] पालनाकौमुदिन्दु विंजित्य चौद्याम्बिततानलक्ष्याः । रामाह

[46] राशिदेपवद्धभटान् सभटपेड़िप्रभृतिन् मृकुमिक

---

[1] Read द्भिः [2] Omit the r-strokens. [3] Omit the r-strokens.

[4] Read श्व. [5] Read संव. [6] Read मार्ग्ग. [7] Read श्या. [8] Read संवत्।

[9] Read स्था [10] This is doubtful, probably त्थि is to be read. If so, the correct form here would be उत्थितासनि- । [11] Probably उत्कीर्णं विज्ञानि माधवेन is correct; the word विज्ञानी means an artist.

[47] स्यान्तितशखं रामः । सलक्ष्मणोरामइवाप्तसें

[48] तुः । तस्मातसुते विषुरिवाजच्चिष्ठ । सदृगराजम्बोघटप्रणो

[49] पर्टणायजर्ड्डुपुवत मन्यमनोदस्याडढाणाविर्जना

[50] श्चकार ।

N.B.—The transcription of the third plate of H is full of doubtful points here and there : in some places, they are altogether obscure. This plate, or rather the whole record, was very hastily and carelessly inscribed.

1.

CHARTER I.

PLATE I.

[1] ॐ [1]स्वस्ति प्रेमनिरुद्धमुग्धमनसोः स्फारीभवच्चक्षुषो

[2] यूँनोर्यत्र विचित्रनिर्भररतक्रीड़ाक्रमं तन्वतोः । विच्छिन्नो

[3] पि कृतातिमात्रपुलकैराविर्भवत्सीत्कृतैराश्लेषग्ल[ ]पितक्ल[-]

[4] मैः स्मररसः कामं मुहुस्ताय्यते ॥ [2]यत्राशेषविशेषरूप[-]

[5] महिमापास्ताप्सरःकान्तिभिर्जातेर्ष्याकलहेष्वपि प्रणयिनः

[6] कर्णोत्पलैस्ताड़िताः । जायन्ते प्रविशच्छितस्मरशरप्रोत्थापि[-]

[7] तान्तर्व्यथा[ः] स्यन्दिस्वेदजलावसेचनवशान्निर्यातरोमा[-]

[8] ङ्कुराः ॥ [2]अत्युत्तुङ्गकरीन्द्रदन्तमुसलप्रोद्भासिरोचिश्चयै

[9] र्ध्वान्तध्वन्सन[3]निष्फलीकृतशरच्चन्द्रोदयैः सर्व्वदा [।] यत्रासौ

[10] दसतीजनस्य विशदं मुक्तामयं मण्डनं सङ्केतास्पदमप्यतीवध[-]

[11] वलप्रासादशृङ्गाग्रतः ॥ [4]महानदीतुङ्गतरङ्गभङ्गा[5]स्फारोच्च[-]

[12] लच्छीकरवद्भिरारात् । यस्मिन्नतासक्तिमदङ्गनानां श्रमापनोदः

[13] क्रियते मरुद्भिः ॥ तस्मात् श्रीययातिनगरात् ॥ [6]लोकत्रयप्रथि[-]

[14] तशुभ्रयशोवितानव्याप्ताष्टदिक्प्रसभनिर्जितवैरिवर्गः । राजा

N.B.—The letters and signs enclosed within brackets [ ] are supplied by me.

[1] Read षे. [2] Metre : Śārdûlavikrîḍita. [3] Read ध्वंसन. [4] Metre : Upajati of Indravajrâ and Upendravajrâ. [5] Omit the sign of long ā.
[6] Metre : Vasantatilaka.

[15] बभूव भुविभावित भव्यमूर्त्तिः श्रीमान्सरोजवदनो जनमेजया[-]

[16] ख्यः ॥ [1]निर्द्दारितारिकरिकुम्भसमुद्गमुक्तमुक्ताफलप्रकरदन्तुरखङ्ग[-]

PLATE II (*a*).

[17] धारः । तस्मादजायत जगत्त्रयगीतकीर्त्तिर्हेलाविनिर्जितरिपुर्न्नृप[-]
तिर्य[-]

[18] याति । [2]मद्योल्लोलालिमालाकुलकरटपुटस्यन्दिदानप्रवाहान्
सिन्दुरार[-]

[19] क्तकुम्भान् श्वितपृथुलरदान् कामदेवादिस[3]ज्ञान् । जित्वाऽजायाल[-]
माजौ ज[-]

[20] नितसुरवधूविस्मयः स्मेरवक्त्रः स [4]द्वात्रिंशत्करीन्द्रान् शरनिकर[-]
हतारो[-]

[21] हक[ा]नग्रहीद्यः ॥ परममाहेश्वरपरमभट्टारकमहाराजाधिराज[-]
पर[-]

[22] मेश्वर सोमकुलतिलकत्रिकलिङ्गाधिपतिश्रीमहाभवगुप्तराजदेव[-]

[23] पादानुध्यातपरममाहेश्वर परमभट्टारकमहाराजाधिराजप[-]

[24] रमेश्वर सोमकुलतिलकत्रिकलिङ्गाधिपतिश्रीमहाशिवगु[-]

[25] प्तराजदेवः कुशली । कोसलदेशे तेलातटविषये

[26] डेलाडेलीग्रामे ब्राह्मणान्सम्पूज्य तद्विषयीय यथाकाला[-]

[27] ध्यासिनः समाहर्तृसन्निधातृनियुक्ताधिकारिक दण्डपाशिक चट्ट[-]

[28] भट्टपिशुन[5] वेटकावरोधजन राज्ञीराजपुत्त्रराणकराज[-]

[29] वल्लभादीन् सर्वान्राजपादोपजीविनः समाज्ञापयति वि[-]

[30] दितमस्तु भवतां यथास्माभिरयं ग्रामः सनिधिः सोपनिधिः

[31] सदशापराधः सर्व्वबाधाविवर्जितः सर्व्वोपरिकरादानसहि[-]

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[1] Metre : Vasantatilaka.

[2] Metre : Sragdhara.

[3] Read संज्ञान्.

[4] Read षड्द्वात्रिंशद् as in J.

[5] Read वैचिका ।

PLATE II (*b*).

[32] तः । चतुःसीमापर्य्यन्तः साम्रमधूकः सगर्त्तोषरः सजलस्थ[-]
[33] लः प्रतिनिषिद्धचट्टभट्टप्रवेशः कौशिकगोत्राय देवरात[-]
[34] [1]औदलविश्वामित्रप्रवराय गौतमशाखाध्यायिने श्रावस्तिम[-]
[35] ण्डले कासिलीविनिर्गताय लावडाविषय[ˋ]न्तरडिवास्तव्याय
[36] परमेश्वरनप्त्रे सिद्धेश्वरसुताय भट्टश्रीमहोदधये उ[-]
[37] दकधारापुरःसरं आचन्द्रतारकार्क्कक्षितिसमकालोपभोगा[-]
[38] र्थं मातापित्रोरात्मनश्च पुण्ययशोऽभिवृद्धये ताम्रशास[-]
[39] नेनाकरीकृत्य प्रतिपादित इत्यवगम्य समुचितभाग[-]
[40] भोगकरहिरण्यादिप्रत्यायमुपनयद्भिर्भवद्भिः सुखे[-] गौ[-]
[41] न वक्तव्यमिति [।] भाविभिश्च भूपतिभिर्दत्तिरियमस्मदीया धर्म्म-
[42] रवादस्मदनुरोधाच्च स्वदत्तिरिवानुपालनीया [।] तथाचोक्तं धर्म्म[-]
[43] शास्त्रे

N.B.—Here occur the usual verses, for which see lines 47–66 of the text of J below.

PLATE III.

[59] परममाहेश्वर परमभट्टारकमहाराजाधिराजपरमेश्व[-]
[60] र सोमकुलतिलक त्रिकलिङ्गाधिपतिश्रीमद्ययातिदेवपादप्र[-]
[61] वर्द्धमानविजयराज्यचतुर्व्विंङ्शतिसम्वत्सरे[2] आषाढ़शुक्लपक्षे ति-
[62] थौ पञ्चम्यां यत्राङ्केनापि सम्वत्[3] २४ आषाढ़ शुदि ५ लिखित[-]
मिदं शा[-]
[63] सनं महासान्धिविग्रहराणकश्रीधारदत्तावगतेन महासान्धिविग्रह-
[64] कायस्थ तथागतेनेति विनाणि[4] वासुकेनो[5]त्कारितम् ॥

N.B.—The letters and signs enclosed within brackets [ ] are supplied by me.

[1] For देवरात औदल read देवरातौदल. There is a sign above थ, which may stand for the e- sign.
[2] Read चतुर्विंशति संवत्सरे । [3] Read संवत्
[4] Read विज्ञानि. [5] Read -त्कीर्णम् ॥

J.

FIRST PLATE.

[1] ॐ[1] [2]स्वस्ति प्रेमनिरुद्धमुग्धमनसोः स्फारीभवच्चक्षुषो
[2] र्यूनो र्यत्र विचित्रनिर्भररतक्रीड़ाक्रम[ं] तन्वतोः[।] विच्छिन्नोपि
कृता [-]
[3] तिमात्रपुलकैराविर्भवत् सीत्कृतैराश्लेषैर्ग्लपितक्लमैः स्मरर[-]
[4] सः काम[ं] मुज्जस्ताप्यते ॥ [3]यत्राशेषविसे[4]षरूपमहिमापास्ता[-]
[5] प्सरःकान्तिभिर्ज[ा]तेर्ष्याकलहेष्वपि प्रणयिनः कर्णोत्पलै[-]
[6] स्ताड़िताः[।]जायन्ते प्रविशत्सत[5]स्मरशरप्रोत्थापितान्तर्व्यथा[ः]
स्यन्दी[ ][6]
[7] स्वेदजलावसेचनवशान्निर्यातरोमाङ्कुराः ॥ [7]आ[8]त्युत्तुङ्ग[-]
[8] रीन्द्रदन्तमुसलप्रोद्भासिरोचिश्चयैर्ध्वान्तध्वन्सन[9]निष्फ[-]
[9] लीकृतशरच्चन्द्रोदयैः सर्व्वदा [।] यत्रासीदसतीजनस्य
[10] विशदं मुक्तामयं मण्डनं सङ्केतास्पदमप्यतीवध[-]
[11] वलप्रासादशृङ्गाग्रतः ॥ महानदीतुङ्गतरङ्गभङ्गस्फा[-]
[12] रोच्छलत्सीकरवद्भिरारात् [।] यस्मिन्नताशक्तिमदङ्गनानां श्रमा[-]
पनो[-]
[13] दः क्रियते मरुद्भिः ॥ तस्मात् श्रीययातिनगरात् । [10]लोकत्रयप्र[-]
[14] थितशुभ्रयशोवितानव्याप्ताष्टदिक्प्रसभनिर्ज्जितवैरिवर्गः ।
[15] राजा बभूव भुवि भावितभव्यमु[11]र्त्तिःश्रीमान्सरोजवदनो जनमे[-]
[16] जयाख्यः [12]निर्द्दारितारिकरिकुम्भसमुद्गतमुक्ताफलप्रकरद[-]
[17] [13]न्तरखड्गधारः [।]तस्मादज[ा]यत जगत्र[14]यगीतकीर्त्तिर्हे[ं]ला[-]
विनिर्ज्जित[-]

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[1] Represented by a symbol. [2] Metre: शार्दूलविक्रीड़ित.

[3] Metre: शार्दूलविक्रीड़ित. [4] Read शे. [5] Read प्रविशच्छित।

[6] Read स्यन्दि. [7] Upajāti of Indrávajrá and Upendravajrâ.

[8] Read च for चा [9] Read ध्वंसन। [10] Metre: Sardûlavikrîdita.

[11] Read मूर्त्ति. [12] Metre: Sardûlavikrîdita. [13] Read न्तु। [14] Read त्त्रय.

SECOND PLATE (*a*).

[18] रिपुर्न्नृपतिर्य्ययातिः । [1]यत्खड्गाग्रविपाटितद्विपघटाकुम्भस्थ[-]
[19] लादुल्लसन्मुक्ताजालविभूषितं प्रतिरणं पृथ्वीवधूरःस्थलं । शश्व[-]
[20] द्व[ा]रनमन्नराधिपशिरोरत्ना[ं]शुजालामला[ः ।] यत्पादाम्बुजरेणवः सम[-]
[21] तया तद्विमललक्ष्मीं दधुः ॥ [2]माद्यलो[3]लालिमालाकुलकरटपुटस्य[-]
[22] न्दिदानप्रवाहान् सिन्दुरारक्तकुम्भान् [4]शितपृथुलरदान् काम[-] देवादि[-]
[23] संज्ञान् जित्या[5]ऽजापालमार्गो जनितसुरवधूविस्मयःस्मेरवक्त्रः स [-]
[24] द्वात्रिंशत्करीन्द्रान् शरनिकरहतारोहकानग्रहीद्यः ॥ परममा[-]
[25] हेश्वर परमभट्टारक महाराजाधिराजपरमेश्वरसोमकुल[-]
[26] तिलकत्रिकलिङ्गाधिपतिश्रीमहाभवगुप्तराजदेवपादानु[-]
[27] ध्यातपरममाहेश्वरपरमभट्टारकमहाराजाधिराजप[-]
[28] रमेश्वर सोमकुलतिलकत्रिकलिङ्गाधिपतिश्रीमहाशिवगुप्त[-]
[29] राजदेवः कुशली । [6]घसुवत्यां तेलातट्टविषयीयह्लुत्तरुमा[7]
[30] ग्रामे तद्विषयीयब्राह्मणानापूज्य समाहूतसन्निधातृनियु [-]
[31] क्ताधिकारिक दण्डपासि[8]कपिशुनवेत्रिकावरोधजनराण[-]
[32] कराजवल्लभादीन् सर्व्वान्राजपादोपजीविनः समाज्ञापय[-]
[33] ति विदितमस्तु भवतां यथास्माभिरयं ग्रामः सनिधिः सोप[-]
[34] निधिः सदशापराधः सर्व्वबाधाविवर्ज्जितः सर्व्वोपरिकरादा[-]
[35] नसहितः ।[9] चतुसीमापर्यन्तः साम्रमधुकः सगर्तोष [-]

SECOND PLATE (*b*).

[36] र[:]सजलस्थलः प्रतिनिषिद्धचट्टभट्टप्रवेशः कौशि[-]
[37] कगोत्राय देवरात[10]औदलविश्वामित्रप्रवराय गौतमशा[-]

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[1] Metre: Śārdūlvikrīḍitam. [2] Metre vasantatilaka. [3] Read ल्लो.

[4] Read सित । [5] Read जित्वा. [6] This mark of punctuation is unnecessary. [7] Read य. [8] शि. [9] This mark of punctuation is unnecessary.

[10] Instead of तऔ read तौ ।

[38] स्वाध्यायिने श्रावस्तिमण्डले कासिलीविनिर्गताय लावडावि[-]
[39] षयेन्तरडीवास्तव्याय परमेश्वरनप्त्रेसिद्धेश्वरसुता[-]
[40] य भट्टश्रीमहोदधये उदकधारापुरःसर[म्]आचन्द्र[-]
[41] तारकार्कक्षितिसमकालोपभोगात्थं [1]मातापित्रोरात्मन[-]
[42] श्च पुण्ययशोऽभिवृद्धये ताम्व्[2]शाशनेनाकरीकृत्य प्रतिपादि[-]
[43] त इत्यवगत्य समुचितकरनिकरभोगभागादिकमु[-]
[44] पनयद्भिर्भवद्भिः सुखं प्रतिवस्तव्यमिति ॥ भाविभि[-]
[45] श्च भूपतिभिर्द्दत्तिरियमस्मदीया धर्म्मगौरवादस्मदनु[-]
[46] रोधाच्च स्वदत्तिरिवानुपालनीया ॥ तथाचोक्तं धर्म्मशास्त्रे बहुभि
[47] व[ ]सुधा दत्ता राजभिः सगरादिभिः। यस्य यस्य यदा भूमिस्तस्य त[-]
[48] स्य तदा फलं ॥ [3]मा भूदफलशङ्का वः परदत्तेति पार्थिवाः स्वदा[-]
[49] नात् फलमानन्त्यं[4] परदत्तानुपालने ॥ [5]षष्ठि[6]म्वर्षसहस्राणि स[-]
[व]
[50] र्गे मोदति भूमिदः। आच्छेत्ता चानुमन्ता च दयमेव नरकम्व्[-]
[51] जेत् ॥ [7]अग्नेरपत्यं प्रथमं सुवर्णं भूर्वैष्णवी सूर्यसुत[ा]श्च गावः यः

THIRD PLATE (*a*).

[52] काञ्चनं गाश्च महीञ्च दद्यात्[।] दत्ता स्त्रयस्तेन भवन्ति लोके[8]॥ [9]आस्फो[-]
[53] टयन्ति पितरो वल्गयन्ति पितामहाः[10] ॥ भूमिदाता कुले जातः
[54] स नस्त्राता भविष्यति [।] [11]भूमिं यः प्रतिगृह्णाति यश्च भूमिं प्रयच्छ[-]

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[1] Read— भोगार्थं । [2] Read ताम्रशासनेना- । [3] Metre: Anushtubh.

[4] May be corrected to मानन्त्यं as Fleet has done. But I think मानन्त्य also may be retained meaning "longlasting," especially as all the versions shew this form.

[5] Metre: Anushtubh. [6] Read षष्टिवर्ष । [7] Metre: Indravajrâ.

[8] Read लोकाः [9] Metre Anushtubh. [10] Omit one perpendicular.

[11] Metre: Anushtubh.

[55] ति [।] उभौ तौ पुण्यकर्म्माणौ नियतं स्वर्गगामिनौ [॥] [1]तड़ागानां सहस्रेण

[56] वाजपेयशतेन च [।] गवां कोटिप्र[दा]नेन भूमिहर्त्ता न शुध्यति । [2]स्वर्ण[3]मेकं गामेकां

[57] भूमेरप्यर्द्ध[4]मङ्गुलं [।] हरन्नरकमायाति यावदाहूत[5]संप्लवं ॥ [6]अन्यायेन

[58] हृता भूमिरन्यायेन तु हारिता [।] हर्त्ता हारयति[7] यस्तु मन्दबुद्धिस्तमोवृतः । स[-]

[59] बद्धो वारुणैः पाशैस्तिर्यग्योनिं स गच्छति [॥] [8]स्वदत्तापरदत्तांवा

[60] [9]जो हरेत वसुन्धरां स विष्ठायां कृमिर्भूत्वा[10] पितृभि[ः] सह पच्यते ॥ [11]आ[-]

[61] दित्तो[12] वरुणो विष्णु[13]ब्रह्मा सोमो हुताशनः [14] [।] शूलपा[-]

[62] णिश्च भगवानभिनन्दन्ति भूमिदं । [।] [15]सामान्यो [ऽ]य[ं] धर्म्मसे[-]

[63] तुर्न्नृपाणां काले काले पालनीयो भवद्भिः ॥ सर्व्वानेतान् भावि[-]

[64] नः पार्थिवेन्द्रान् भूयो भूयो याचते रामभद्रः । [16]इति कमल-

[65] दलाम्बुविन्दुलोलां श्रियमनुचिन्त्य मनुष्यजीवितञ्च [।] सकलमिद[-]

[66] मुदाहृतञ्च बुद्ध्वा नहि पुरुषैः परकीर्त्तयो विलोप्याः [।] [17]येनात्यन्त[-]

[67] सुरासुराधिपगुरुप्रज्ञाभिमानो जितो राज्ञारोपितराज्यभारम[-]

[68] तुलं यश्चावहल्लीलया [।] यस्यासीन्नयविक्रमद्वयमपि [18]प्रेयांसखास[-]

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[1] Metre : Anushtubh. [2] Metre : Anushtubh. [3] Read सुवर्ण.
[4] Read द्धं. [5] Read भू. [6] This sloka has six feet : metre अनुष्टुभ्.
[7] Read -यिता. [8] Metre : Anushtubh. [9] Read यो. [10] Read त्वा.
[11] Metre : Anushtubh. [12] Read त्या [13] Read -ष्णु वै- । [14] Read शनः
[15] Metre : S'âlinî. [16] Metre : Pushpitāgrâ. [17] Metre Sardûlavikrîḍita
[18] Read म् for *anusvāra*.

[69] व्वंदा स श्रीमान्धृतसान्धिविग्रहपदः श्रीसिङ्घदत्ताह्वयः [॥]

कोसलीयसन्धिविग्रही[1] सता[2]क

THIRD PLATE (*b*).

[70] कायस्थ सूर्यसेणेन लिखितं शासनं स्थास्नु यावच्चन्द्रार्कता[-]

[71] रकं ॥ परममाहेश्वर परमभट्टारकमहाराजाधिराजपरमे[-]

[72] श्वर सोमकुलतिलकत्रिकलिङ्गाधिपति श्रीमद्ययातिदेवस्य प्र[-]

[73] वर्द्धमानविजयराज्येऽष्टाविंशतिमे सम्वत्सरे[3] भाद्रपदमासे

[74] सितपक्षे तिथौ पञ्चम्यां यत्राङ्केऽपि सम्वत् २८ भाद्रपद

[75] सुदि ५ शिवं ॥ [4]विनानी मधुमथनेनोत्कीरितम्[5] ॥

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[1] Probably कोशलीयसन्धिविग्रहिसत्ताक is the correct expression, meaning "belonging to the office of the minister of peace and war of the Kosala country."

सताक—The sign of त्ता is not very distinct; it looks more like the sign of a full stop. The word must, however, be either सत्त्वक or सत्ताक. It is derived most probably from root अस्. It is equivalent in meaning to प्रतिबद्ध in line 42 of A, line 47 of B, line 40 of G. The three letters may also be read as सवक, a mistake for सेवक, a servant.

[3] Read संवत्सरे। Read—कीर्णम्

[4] E, F and H have विज्ञानी, which is probably the correct form. This was probably an official title. I has विननि.

[5] Read कीर्णम्।

A Tabular Abstract of the Eleven Charters.

1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16
No.	Place of find.	Grantor.	Date.		The place from which the charter is issued.	Villages granted.	The district or Viṣaya in which the granted villages are situated.	Country in which (7) is situated.	Grantee's name	Grantee's Residence.	Country in which (10) is situated.	Place from which the grantee is an immigrant.	Writer.	Mahāsāndhivigrahin.	Engraver.	Remarks.
			Year of the grantor's reign.	Month etc.												
I A	Pāṭnā.	Mahā-Bhavagupta I *alias* Janamejaya.	6	Āṣāḍha, sudi 8.	Victorious camp at Murasīma.	Vakaveḍḍā	Oṅgātaṭa.	...	(1) Dâmâka. (2) Nârapaganḍa's son. (3) Vāsudeva. (4) Koṇḍadeva.	Leisṛṅgâ. Kṣaṇḍukṣetra. Lipatuṅgâ. Pampâsarasî.	... ...	Pampâsarasî. Odaya Sṛṅgâ. Koṅkaleḍḍa Kaliṅga.	The *Kāyastha* Koighoṣa, son of Vallabhghoṣa, (who belonged to the office the son of Mallādhārdatta.)	Mallādhāradatta.	...	In A and G, the grants are made subject to the payment of a small revenue.
II G	"	"	6	Kārtika, sudi 13.	"	Pāsitalā.	Potā.	[*Kosala.]	(1) Keśava and (2) Apya.	Loisṛṅgâ.	...	Kommâpira.	*Kāyastha* Koighoṣa (son of Vallabhaghoṣa.)	Malladatta, son of Dhāradatta.	...	Do.
III B	Chauḍwâr (near Kaṭak).	"	31	Márgaśira, sudi 13.	Victorious camp at Ārāma.	(1) Raṇḍā and (2) Alānḍalâ.	Povā.*	Kosala.	Sâdhâraṇa, (the Mahattama).	Turvvunâ.	Kosala.	Ṭṭakârî.	Kayastha Mâhûka son of Priyaṅkarâditya.	Malladatta, (the Raṇaka).	Mādhava son of Vāsu.	In B, C, D, the other name Janamejaya is not mentioned.
IV C	Prob. near Kaṭak.	"	"	"	"	Arkigrâmâ.	Ṭulumva-(khaṇḍa).	"	"	"	"	"	"	"	"	Do.
V D	Kaṭak.	"	"	"	"	Tū(?trû)leṇḍā.	Sandānā.	"	"	"	"	"	"	"	"	Do.
VI H	Pāṭnā.	Mahā-Śivagupta, *alias* Yayâti.	8	"	Victorious camp (Kaṭak), Vinitapura	Talakajja.	Sanṛlâ.	"	Kámadeva.	Jalajaḍḍa.	"	Mâdhdhîla	Ucchavanāga (the *utthitāsanî*), son of Samamphenāllava, by command of Dhāradatta.	Dhâradatta (the Rāṇaka).	Vijñānî Mâdhava, son of Vāsu.	This is the obscurest of the charters.

* Though the name of the country is not given, I suppose it must be Kosala. For Povâ in B should be read Potâ. The letter looks like *t* rather than *v*.

A Tabular Abstract of the Eleven Charters—*Continued.*

1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16
No.	Place of find.	Grantor.	DATE.		Place of issue.	Villages granted.	The district or Vishaya.	Country.	Grantee's name.	Grantee's Residence.	Country.	Place from which the grantee is immigrant.	Writer.	Mahāsandhivigrahin.	Engraver.	REMARKS.
			Year of the grantor's reign.	Months.												
VII E	Kaṭak.	,,	9	Jyaiṣṭha, sudi 13.	Vinitapura	Chânda-(grāma).	Marada.	Dakshiṇa-Tosalā. [Prob. a mistake for Kosalā, Fleet].	Saṅkhapâṇi.	(S'rî) S'ilâbhañjapati.	Oḍra.	(S'rī) ballagrama in Madhyadeśa.	...	Cchicchaṭesva.	Vijñânî Mâdhava.	...
VIII I	Pāṭnā.	Mahā-S'ivagupta, *alias* Yayâti.	24	Āṣâḍha, sudi 5.	Yayâtinagara.	Helâhelî [or Delâḍelî].	Telātaṭṭa.	Kosala.	Mahodadhi	Ntaraḍi in Lavaḍâ-(*vishaya*).	...	Kasilî in Srāvastimaṇḍala.	Tathāgata, a Kāyastha (writer) of the office of the Mahāsandhivigrahin.	Dhâradatta (the Rāṇaka).	...	...
IX J	,,	,,	28	,,	,,	Lluttarumâ.	,, in Ṣaṇṇavati.	,,	,,	,,	...	,,	Kāyastha Sūryasena (of the office of the Mahāsandhivigrahin.	Singhadatta (M.S. of the Kosala).	The Vijñanî Madhumathana.	...
X F	Prob. near. Kaṭak.	Mahā-Bhavagupta II. *alias* Bhimaratha.	3	Mārgaśira, sudi 3.	,,	Gaṇḍasimiṇilli (grāma).	S'âkhâṅgadyanhâ.	,,	Raccho, the râṇaka.	Siṅgoâ (grama) in Devîbhoga (viṣaya).	Kosala.	Kasîllîbhaṭṭagrāma in Srâvastimaṇḍal.	Maṅgaladatta.	Siṅghadatta.	The Vijñānī, Madhumalla.	...
XI	Kudopali (village), Bargarh (tahsil), Sambalpur (district).	Ditto's feudatory chief, a lord of 15 villages, named Puñja, son of Bodā.	13th year of Mahā-Bhavagupta II's reign.	...	Residence of Puñja at Vā (?) Maṇḍāpāṭī. Mahā-Bhavagupta II was residing at Yayāti-nagara.	Loisarā.	Giḍāṇḍā (*Maṇḍala*).	...	(Bhaṭṭaputra) Nārāyaṇa, son of Janārdana.	...	...	Hastipada.	Purṇṇadatta, son of Kiraṇa, the *S'reṣṭhin* of Lenapura.	...	...	Written in a very cursive hand. The second name, Bhīmaratha, of Mahā-Bhavagupta II is not mentioned.

2. *Earwigs of the Indian Museum, with Descriptions of New Species.—By* MALCOLM BURR, B.A., F.L.S., F.G.S., F.Z.S., F.E.S. *Communicated by* N. ANNANDALE.

Genus APACHYS SERVILLE.

Apachys feæ Borm. Sikhim. Nos. 5301-02/14, 1802/6, 2552-3-4-5-6-8-9/5. All nymphs. Previously recorded from Silhet and Burma.

Genus DIPLATYS SERVILLE.

Diplatys ridleyi Kirb. Upper Assam, No. 1332/9. ♀. This species has been recorded from Sumatra, but the specimen in question does not appear to be distinct.

Diplatys gladiator, n. Calcutta. 1 ♂, No. 7336/14, and a larva, taken also at Calcutta, by Mr. Nelson Annandale. Owing to the distribution of the colours, I feel certain that this larva belongs to this species. It has the very long segmented cerci that are characteristic of the larvæ of this genus.

Genus PYGIDICRANA SERVILLE.

Pygidicrana eximia Dohrn. No. 5310/14, ♂; Berhampur No. 5962/12, ♀.

Genus ECHINOSOMA SERVILLE.

Echinosoma sumatranum (Haan). Khasi Hills, Sibsaugor No. 5324/14. (S. E. Peal.) One ♀. Also a fragment which I refer with doubt to this species, labelled Calcutta, and another fragment from Sikhim, No. 2560/5. The species is abundant in Java, Sumatra, etc.

Genus FORCIPULA BOLIVAR.

Forcipula trispinosa (Dohrn). Sikhim, Nos. 8858/13, ♂. 5308/14 ♀, 5315/14, ♂.

Forcipula quadrispinosa (Dohrn). Sikhim, Nos. 5319-26-29/14. All females. Both these species are previously known from India and Burmah.

Forcipula decolyi Borm. Sibsaugor, (S. E. Peal), 1♂. No. 5317/14. Previously recorded from Madras.

Genus LABIDURA LEACH.

Labidura bengalensis (Dohrn.) Berhampur, No. 5960-1-3-4-5/12. 2 ♂ ♂, 3 ♀ ♀. Hardware, (J Wood-Mason), 1 ♂, No. 5320/14. Calcutta, 1 ♂ & 1 ♀, (Mus. Collr.) Also a larva, Berhampur, No. 5969/12.

Labidura riparia (Pall.) var. *inermis* Brunner. Berhampur, Nos. 5967-8/12. 1 ♂, 1 ♀. Calcutta, 18 ♂ ♂, 42 ♀ ♀, 25 larvæ.

Labidura riparia (Pallas.) Type form. Bangalore, (Cameron). No. 5314/14, 1 ♂. Berhampur, No. 5966/12, 2 ♀. Seistan Boundary Commission, 1 ♂. Dehra Dun, No. 6337/8, larva.

Labidura lividipes (Dufour.), Ranchi, No. 8426/12. Calcutta, Nos. 5577/12, 5528/12, 2 ♀ ♀, & 8200/11, broken.

Genus LABIDURODES Bormans.

Laburodes robustus Borm. Tavoy, No. 170/5. This specimen is not mature, but it agrees well with de Borman's description of the type from New Guinea.

Genus ANISOLABIS Fieber.

Anisolabis annulipes Lucas. Calcutta, 2 ♂ ♂.

Genus SPONGIPHORA Serville.

Spongiphora sphinx Burr. Calcutta, 1 ♂.

Genus CHELISOCHELLA Verhœff.

Chelisochella superba (Dohrn.) Johore, (J. Wood-Mason.), No, 5305/14. 1 ♂.

Genus CHELISOCHES Scudder.

Chelisoches morio (Fabr.)? New (?) Hebrides, No. 5306/14. coll. Distant), 1 ♀. Johore, No. 5304/14, (J. Wood-Mason.), 1 ♂. Abundant throughout the Oriental Region.

Chelisoches glaucopterus Bormans. Upper Assam, No. 1330/9, 1 ♂. Recorded from Burmah.

(?) *Chelisoches melanocephalus* (Dohrn.) Upper Assam, No. 1334/9, 1 ♂. Recorded from India.

Genus ALLODAHLIA Verhœff.

Allodahlia scabriuscula (Haan.). Sikhim, Nos. 5303/14, 9015/7, 2 ♀ ♀; Sikkim, Mung Phu, No. 6225/8, 1 ♂. Sibsaugor, Nos. 5322/14, 5318/14, 2 ♂ ♂, (S. E. Peal). Dunsiri Valley, No. 5321/14, 1 ♂ (Godwin-Austen). Upper Assam, Nos. 1327-28-29-31/9, 2 ♂ ♂, 2 ♀ ♀ No. 5311/14. 1 ♂.

Genus ANECHURA Sudder.

Anechura ancylura (Dohrn.) Naga Hills, (Capt. Butcher.) No. 5309/14. ♀.

Anechura sp. Shillong. No. 5312/14. (Godwin-Austen). 1 ♀.

Anechura metallica (Dohrn.) Khasia Hills, (J. Wood-Mason), No. 5316/14. ♂. Kurseong (purchased), 1 ♂.

Genus OPISTHOCOSMIA Dohrn.

Opisthocosmia oannes Burr. Khasia Hills. No. 5323/14, 1 ♂. Slightly different in colour from the type, (described from Assam;) the elytra and wings are bright bronzy castaneous instead of dark red.

Opisthocosmia sp. n. Sikhim. No. 5325/14. ♀.

Opisthocosmia vivax n. Dikrang Valley, Nanangs, No. 5313/14, (Godwin-Austen.)

Genus FORFICULA Linn.

Forficula sp. n. Rang, Sikhim. No. 5775/5. ♀.

Forficula tomis Koll. Oiwake. 1885. ♂. Recorded from Siberia and Japan.

Forficula sp. n. Sikhim. No. 53235/14. ♀.

Forficula beelzebub Burr. Dardjiling. No.5745/5. ♀. Previously recorded from Dardjiling.

Forficula sp. n. Gilgit Exp. No. 3824/6. ♀.

Forficula celer n. Khasia Hills. No. 5327-8/14. ♂ ♀.

Forficula acer n. Sikhim, Mung Phu, No. 6724/8.

Genus APTERYGIDA Westwood.

Apterygida bipartita Kirb. Nos. 5330-5361/14, 41, ♂ ♂, 61 ♀ ♀; Bangalore (Cameron), Nos. 5364-5-6-7/14, 6 ♂ ♂, 12 ♀ ♀. Some very dark in colour; also several fragments.

Descriptions of New Species.

DIPLATYS GLADIATOR sp.n.

Caput fuscum, postice pallescens, oculis atris; occiput postice carinulis 4 instructum, suturis valde distinctis; frons inter oculos indistincte bi-impressa: antennæ typicæ, pallidæ: pronotum rotundatum, æque longum ac latum, pallidum; scutellum magnum, pallidum, triangulare: elytra brevia lata nigra; alæ rudimentariæ, haud prominentes; pedes pallidi; abdomen gracile, læve, tuberculis lateralibus parum distinctis, testaceo-rufum; segmentum penultimum breve, propter magnitudinem segmenti ultimi ceteris valde latius; segmentum ultimum dorsale quadratum, postice paullo dilatatum, rufum, læve, prope marginem posticum medio impressum, margine postico recto, prope angulos postico oblique truncato: forcipis bracchia valde depressa, basi subcontigua, margine interno

in dentem acutum magnum dilatata, dehinc inermia, incurva, attenuata, aream ovalem includentia. ♂.

♂
Long. corporis......8·75 mm.
„ forcipis.......1·5.

INDIA :—CALCUTTA.

A very distinct species, characterised by the rudimentary wings, black elytra, which are broad but short, round pronotum, and the form of the last abdominal segment and forceps.

There is a larva with long segmented cerci which, on account of the distribution of colours, I attribute also to this species. It also comes from Calcutta.

OPISTHOCOSMIA VIVAX sp. n.

Statura majore, castanea: caput magnum, tumidum sulcis Y-formantibus, profunde impressis: pronotum oblongum, antice rectum, postice paulo angustius, subrotundatum; prozona tumida, metazona plana, rugulosa: elytra ampla, granulosa; alæ prominentes, læves: prosternum latum, postice angustatum, margine antico recto, paulo reflexo: abdomen medio dilatatum, læve; segmentis omnibus margine postico pilis brevibus spissis horizontalibus instructis; segmentum ultimum dorsale angustum, declive, margine postico recto, integro; medio impresso, utrinque subtuberculato: pygidium prominens, validum, coins 2 acutis terminatum: forcipis bracchia remota, gracilia, subsinuata, apicem versus incurva, margine interno per totam longitudinem denticulata. ♀.

♀
Long. corporis......18 mm.
„ forcipis.......9·5.

INDIA: DIKRANG VALLEY, NANANGS. No. 5313/14. (Godwin-Austen).

This is a very distinct species, characterised by the occipital sutures, the form of the pygidium, and the dilated abdomen.

The basal part of the abdomen is badly broken, but the specimen is apparently a female, though the well developed characters would appear to be more suitable to a male. It is possibly a male.

FORFICULA ACER sp. n.

Nigra; caput globosum, rufum, suturis obsoletis, læve; antennæ...?. (segmenta 7 restant), nigræ: pronotum prozona vix æevata, deplanatum, medio sutura longitudinali instructum, latum, tfpite vix angustius, margine antico recto, postico lateribusque paullo rotundatis, lateribus ipsis paullo reflexis: elytra et alæ edvia, rufo-nigra, lata; abdomen segmentis 1-3 fere lævibus, nigris upberculis lateralibus distinctis; segmentis ceteris fusco-rufis, punctulatis; segmentum ultimum dorsale transversum, margine llostico incrassato, utrinque tuberculo magno nigro instructum: pygiaium magnum longum, angustum parrallelum, apice truncatum: corcipis bracchia rufa valida basi subcontigua, depressa ac deplanata, valde elongata: pars depressa margine interno laminato-crenulata, dente acuto ac forti terminata; dehinc bracchia attenuata, deplanata, sensim incurva, inermia. ♂.

	♂
Long. corporis	8·5 mm.
,, pygidii	1.
,, forc. part. depressæ	2·5.
,, tota forcipis	8·5.

INDIA: Sikhim, Mung Phu. No. 2724/8. ♂.

This specimen is of the "*macrolabia* form" of forceps; it is characterised by the long parallel pygidum.

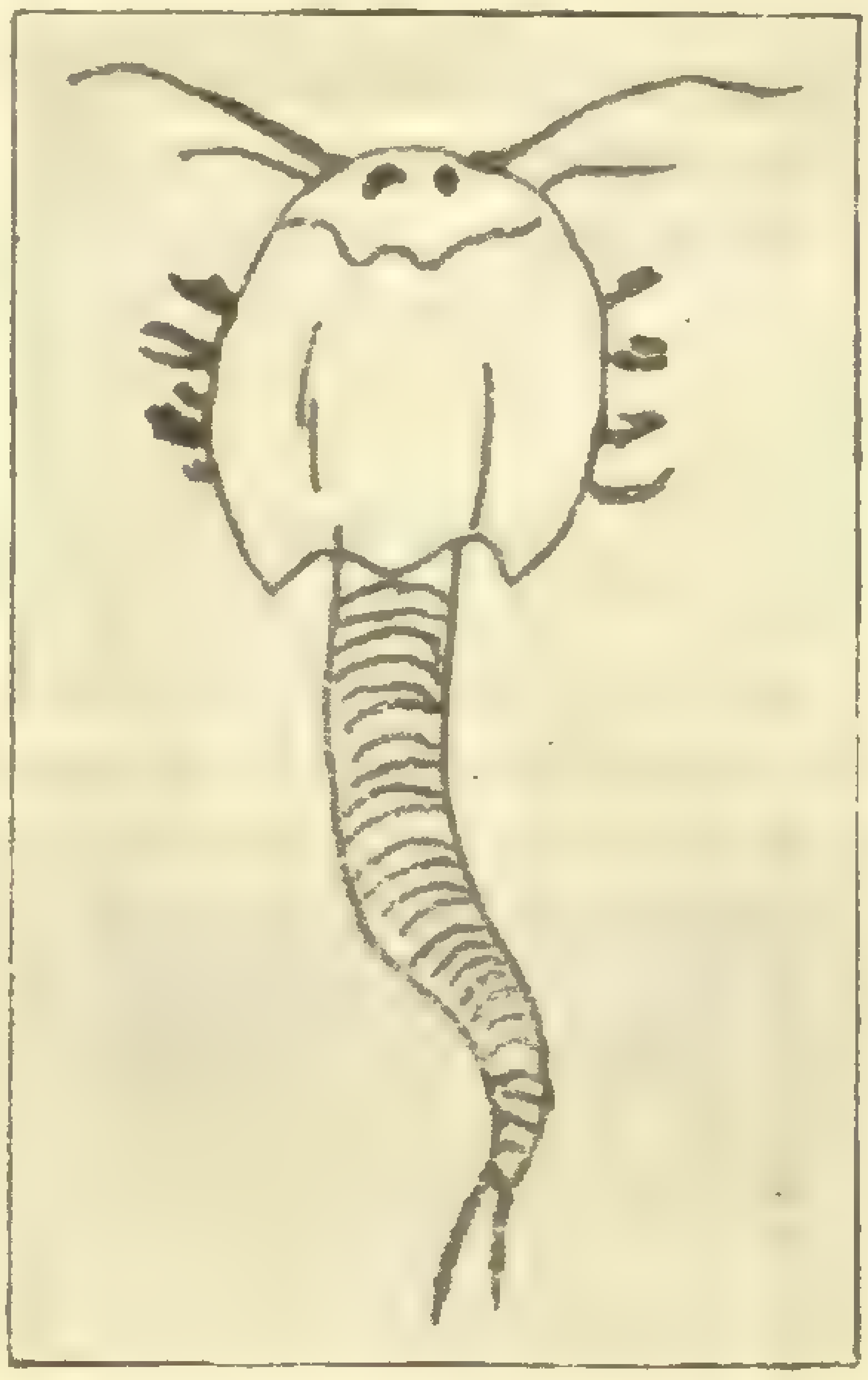
FORFICULA CELER sp. n.

Caput læve, globosum, rufo-nigrum: antennæ 11-segmentaæ, rufæ, apice pallescentes: pronotum magnum, latum, capite vix angustius, margine antico recto, postico rotundato, granulosum; elytra ampla, lata, fulva; alæ longæ, fulvæ: pedes fusco-rufi: abdomen punctulatum, tuberculis lateralibus distinctis; segmentum ultimum dorsale ♂ transversum, utrinque obtuse bituberculatum; ♀ angustius, tuberculis obsoletis: pygidium haud perspicuum: forcipis bracchia ♂ basi contigua, deplanata, margine inerno laminoto-dilatata, usque ad dimidiam partem longitudinis, dehinc subito attenuata, sensim incurva, apice haud attingentia, ♀ contigua, recta, inermia. ♀.

	♂	♀
Long. corporis	9 mm.	8 mm.
,, forcipis	4	2.25.

INDIA: Khasia Hills. Nos. 5327-8/14.

3. *Occurrence of the genus Apus in Balúchistán.—By* E. VREDENBURG, *Geological Survey of India.*



The following is an extract from my diary: "Kohián, 18th February, 1901.... At Thaloṅk there are some strange phyllopods." The above extract together with a rough sketch of the animal, is all that I have written in my diary regarding these creatures, but I am able to supplement this short notice from memory. I was not aware, till a few days ago, that the matter was of any interest whatever, and only drew the sketch in order to be able to identify what appeared to me a very curious crustacean, not thinking that I could, thereby, add any information regarding its distribution. The circumstance did not recur to my mind until a few days ago, when, on showing my sketch to Major Alcock and to Mr. Annandale at the Indian Museum, they recognised it as representing the fresh-water phyllopod crustacean *Apus*, and informed me that the genus has never yet been found within the limits of the Indian Empire. Although, in the absence of an actual specimen, it is not possible to determine the exact species, yet the occurrence of the genus within a region where it had not yet been known to exist appears sufficiently interesting to be worth bringing to the notice of the Society.

Thaloṅk is situated in Latitude 28° 24′ N. and Longitude 64° 43′ at the foot of an abrupt limestone range forming the northern border of the Kharán desert which constitutes a portion of the semi-independent State of Kharán in Western Balúchistán. I passed this locality while marching to Kohián, a camping place situated about three miles further east, and did not have any opportunity of again visiting it. Except for a few wells and springs this region is almost waterless. On the occasion of my visit in the winter of 1900-1901, there had been, however, quite an unusual amount of rainfall. Heavy showers fell on all the hill-ranges at the end of December and beginning of January. Considerable tracts in the desert were flooded, and pools of water remained in many places for weeks and perhaps months. At Thaloṅk I came across what appeared to me a pool of this kind, occupying a shallow depression in the desert plain. It had dwindled to scarcely more than a yard in diameter, and, to me it seemed to be of a transitory nature. Perennial pools, fed by underground springs, do occur in certain parts of the desert, and I cannot say for certain that this one was not of that kind, but from its appearance, this seemed unlikely. On approaching the pool I found it swarming with the crustacea of which I here give a sketch. There must have been dozens of them, all of about the same size. I placed one of them in a bottle of water, but it probably got injured while removing it from the pool for it died almost immediately. I tried to preserve it in spirit, but the bottle was accidentally broken and the specimen lost, so that the only guide remaining to identify it is the rough sketch that I drew the same day that I observed these creatures.

The sketch is drawn approximately of natural size It is quite diagrammatic, but sufficiently detailed to enable clear identification of the object represented. The diagram shows distinctly the principal features of *Apus*, the shield with the main details of its ornamentation, the anterior pair of eyes, the anterior legs, transformed into long antenniform filaments, the expanded branchial legs protruding on either side of the carapace, the greatly segmented abdomen and the caudal appendages. The portion of the body extending beyond the shield is proportionately longer than in the specimens and figures that have been shown to me by Major Alcock and Mr. Annandale. Its relative dimension is possibly slightly exaggerated in my sketch. There is no doubt, however, that it really was longer than in the examples that I have since seen figured or preserved in spirit, for I was particularly struck, at the time, by its shape and size. My sketch shows one pair of eyes in the anterior part of the shield. There exists, in *Apus*, a third unpaired eye placed slightly further back than the line joining the paired eyes, but it is very small and easily escapes detection if one does not know of its existence. The caudal appendages are much shorter in my sketch than in the figures and specimens which I have seen in Calcutta. Perhaps they had got broken in my specimen.

The presence of so large a number of crustacea in the situation where I observed them, appears very puzzling. If the pool was the remnant of a larger pond temporarily filled by rain-water, one can understand that they should have gradually become crowded into a small space as the water receded, but their development must have been very rapid, for if the pool is not one of the perennial ones alluded to, it could scarcely have existed for more than two months previous. If the pool is perennial and normally of the small size it possessed when I saw it, its crowded population is still difficult to account for.[1]

As noticed at a previous meeting by Mr. Annandale, it is probable that the reputed absence from this country of many well-known fresh-water invertebrates is due to our scant knowledge of its fresh-water fauna.

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[1] Mr. Annandale has drawn my attention to the account of the genus in Bird's Natural History of the British Entomostraca, according to which *Apus* can reach a length of one inch after three weeks development from the egg. It has also been noticed in Europe that this crustacean appears sporadically and suddenly in an unaccountable manner.

4. *A note on Halâyudha, the author of Brâhmanasarbasva.*—*By* YOGEŚA CHANDRA S'ASTREE.

PART I.

Brâhmanasarbasva is a well-known book which deals with the explanation of certain Mantras of the Yajurveda. Its author was Halâyudha—a Brâhmana of considerable merit and talent. He was a great scholar of Vaidika and Loukika Sanskrit. He wrote several books in Sanskrit dealing with the different branches of learning. There are different conjectures as to his identity besides what is given by himself in his Brâhmanasarbasva.

Pundita Lâlamohana Vidyânidhi, the author of Sambandhanirnaya, says that Halâyudha, the Prime Minister of Lakshmana Sena, was the Halâyudha of the Chatta family, who was honoured by Ballâla Sena. He also says that this Lakshmana Sena equalized the rank among the Kulins of the Râ̂rhi class, and was the son of Keśaba Sena, and hence the great-grandson of Ballâla Sena.[1]

The late Pundita Muktârâma Vidyâbâgiśa, who edited Venisamhâra, a well-known drama by Bhatta Nârâyana, at the expense of the late Babu Prosanna Kumar Tagore of Calcutta, says in its preface that Halâyudha, the Prime Minister of Lakshmana Sena was sixteenth in descent from Bhatta Nârâyana and was an ancestor of the Tagore family. He wrote many books on Smritis (Hindu Law and Usage) which are still extant. Dr. Râjendra Lala Mitra and Râjâ Sourindra Mohana Tagore, the nephew of Babu Prosanna Kumâra Tagore, mentioned above, are of the same mind with Vidyâbâgiśa, only differing from him in respect of the degree of descent.[2]

The late Babu S'yâmâ Charana Sarakâra, the author of Vyabasthâdarpanam, a well-known digest of Hindu case law, writes in its preface, most probably following Muktârâma Vidyâbâgiśa, that

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[1] *Vide* सम्बन्धनिर्णय by Lâla Mohana Vidyânidhi. First edition, pages 162, 163, 207, 208, 209.

[2] भट्टनारायणादधस्तनषोड़शतमः पुरुषो हलायुध नाम, तेन स्मृतिशास्त्रस्यानेकान् निबन्धान् रचयित्वा महासमज्ञावतारिता । ते च ग्रन्था अद्यापि लोके प्रचलन्ति ।

स च हलायुधो गौड़ाधिपस्य लक्ष्मणसेनस्य संसदि मन्त्रिकार्य्यं करोति स्म ।

इति ৺मुक्तारामविद्यावागीशसंस्कृत-
वेणीसंहारनाटकस्यावतरणिकायाम् ।

[2] *Vide* Sena Râjâs of Bengal, by Dr. R. L. Mittra, and English translation of Veni Samhâra by Babu Sourindra Mohana Tagore (now Râjâ).

"this great Pundita (Halâyudha) was the spiritual guide of Laksmana Sena, a renowned monarch, who gave his name to an era of which upwards of seven hundred years have expired. Halâyudha was a decendant in the fifteenth degree of Bhatta Nârâyana, author of Venisamhâra (a celebrated drama) and one of the five Vedântists, who were brought from Kanouj by Râjâ Âdiśura and whose descendants are almost all the Rârhi and Bârendra Brâhmanas of Bengal."[1]

Now, three questions arise here for decision :—

(1) If Halâyudha, the author of Brâhmanasarbasva, did really belong to the Chatta family as stated by Lâla Mohana Vidyânidhi, or the Bandya family as stated by Muktârâma Vidyâbâgiśa and his followers.

(2) If he was the prime minister of Lakshmana Sena, the son of Keśaba Sena and great-grandson of Ballâla Sena.

(3) Who was he in fact?

At a certain date in his reign Ballâla Sena, the King of Bengal, made a gift of a golden cow. Some Brâhmanas of the Rârhi class after causing that cow to be cut into pieces, accepted the gift of gold. Their names are as follows: S'amkara Pitamundi, Divâkara Garagari, Douka Gura, Dokari Pippali, Mârtanda, Ânai, Gânâi, Hara and Gopee Bandya, Dokari Mâshachataka, Mâdhu Sudanâ Râyee, Yaba Kuśâri, Nârâyana Hara, Keśava Dâyaree, Keśava Mahinta, Sakuni Chatta, Nayâri Tailabâti, Viśvesvara Kunda, Bithu Bandya, Madana and Viśveśvara Ghoshala, Hâsya Gânguli, Goutama Putitunda, Pâraśara Simali, and S'amkara Dingsâi.

According to the injunction of the social law and royal command, the above-named Brâhmanas, who accepted the forbidden gift, the goldsmith, who cut the golden cow into pieces, and the Vanika, who bought or sold those pieces of gold, were all degraded.[2]

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[1] Preface of **व्यवस्थादर्पण** by the late S'yâmâcharana Sarakâra, pages 23, 24.

[2] धेनुं स्वर्णमयीं कृत्वा ददौ विप्राय पार्थिवः ।
सा च स्वर्णमयीधेनुश्छेदने प्रजगौ गुरुः ॥
छिन्ना वहिष्कृता राज्ञा स्वर्णानां वणिकोभवत् ।
विप्राः प्रतिग्रहाज्जाताः सर्व्वधर्म्मवहिष्कृताः ॥
शङ्करः पीतमुण्डी च गड़ोऽपि च दिवाकरः ।
गुड़ोडाउकनामा च दोकड़िश्चैव पिप्पली ॥
वन्द्योमार्त्तण्डनामा च तपोनिष्ठदृढ़व्रतः ।
आनायिश्च गणायिश्च हाड़ोगोपी च वन्द्यजाः ॥

Ballâla Sena having observed this evil practice of the Ràrhi class of Brâhmanas, selected some principal Kulins from amongst those who abstained from accepting the gift and invited them to his capital. When the Brâhmanas reached his place Ballâla, after careful examination, declared them to be spotless Kulins and honoured them. The names of those spotless Kulins are as follows: Bahurupa, S'ucha, Arabinda, *Halâyudha* and Bângâla of the Chatta family, Gobardhanâchârya of the Putitunda family, S'ira of the Ghoshâla family, Roshâkara of the Kundalâla family, Jâlhana, Mahesvara, Debala, Vâmana, Iśâna and Makaranda of the Bandya family, Utsaba and Garura of the Mukhaiti family, Kânu and Kutuhala of the Kanjilâla family.[1] It is probable that Ballâla honoured the above-named Kulins of the Râr̀hi class about the same time that he established the aristocracy (**कौलीन्य**) among the Bârendra Brâhmanas.

मासो दोकड़िनामा च रायी च मधुसूदनः ।
कुशारिर्येव नामा च हड़ोनारायणोऽपि च ॥
महिन्ताद्विविधनामा दायारिश्चैव केशवः ।
चट्टशकुनिनामा च तैलवाटीनयारिकः ॥
कुन्दो विश्वेश्वरोज्ञेयो वन्द्यजोविठसंज्ञकः ।
घोषजौ भ्रातरावेतौ मदनविश्वरूपकौ ॥
गाङ्गुली च हास्य नामा पूतिगौतमसंज्ञकः ।
सिम्लि पराशरः ख्यातः शङ्करो डिण्डिसायिकः ॥
अमी कुलोद्भवाश्चैव गोदानं जगृहुर्द्दिजाः ।
तेषां सम्बन्धमात्रेण पङ्क्ते गौरिवसीदति ॥
सम्बन्धे भोजने चैव दाने यज्ञे तथैव च ।
विद्वद्भिः श्राद्धकाले च वर्ज्या एते पुनः पुनः ॥
इति कुलार्णवे ।
(यद्दृष्टं तल्लिखितम्)

[1] बहुरूपो शुचो नामा अरविन्दो हलायुधः ।
वाङ्गालश्च समाख्याताः पञ्चैते चट्टवंशजाः ॥
पूतिगोवर्द्धनाचार्य्यः शिरोघोषालसम्भवः ।
गाङ्गुली च शिशोनामा कुन्दोरोषाकरस्तथा ॥
जाल्हनाख्यस्तथावन्द्यो महेश्वर उदारधीः ।
देवलो वामनश्चैव ईशानो मकरन्दकः ॥
उत्साहगरुड़ौ ख्यातौ मुखवंशप्रतिष्ठितौ ।

Some time after this Ballâla died and his son Lakshmana Sena became the King of Bengal. During his reign he found that those 19 Kulins, who were declared by Ballâla Sena to be spotless, were quarrelling with one another in respect of their rank. None of them thought himself inferior to another, but everyone considered himself superior to another. This put a stop, as it were, to their matrimonial connection.

Lakshmana Sena, the son of Ballâla Sena and inheritor of his throne, having marked this disorder of the Society, which originated from malice, equalized the rank of those 19 Kulins who were previously honoured by Ballâla and who were quarrelling with one another for rank, *i.e.*, he declared them to be of the same status. In the time of this equalization Utsaba and Garura were both left out but were replaced by their children—Âita, Abhyâgata, Pundita and Bâdali. There were in all two equalizations among 21 Kulins. In the first, Âita, Bahurupa, S'ira, Gobordhana, S'iśa, Makaranda and Jâlhana, these seven Kulins were counted; and in the second, Arabinda *Halâyudha*, S'ucha, Bângâla, Debala, Maheśvara, Iśâna, Roshâkara, Bàdali, Vâmana, Pundita, Abhyâgata, Kânu and Kutuhala, these 14 Kulins were reckoned.[1] Ballâla did not make any rule in respect of secondary aristocrats (**गौन कुलीन**). They became apostate during the time of Lakshmana Sena, and consequently were expelled by him from the Kulin class

In the beginning of this note I have stated that Halâyudha wrote Brâhmanasarbasva—an explanatory treatise of certain mantras of the Yajurveda. In its beginning he has identified himself in the following words: "In the lineage (**गोत्र**) of Vâtsya there was

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कानकुतूहलावेतौ काञ्जिकुल समुद्भवौ ॥
ऊनविंशतिसंख्याताः समता लोकसम्मताः ।
एते सर्व्वे महात्मानः सभायां वल्लालस्य च ॥
राज्ञः प्रपूजिताः पूर्व्वं प्रतिग्रहपराङ्मुखाः ।
इति वाचस्पतिमिश्रकृतकुलरमायाम् ।

[1] आइतो बहुरूपाख्यः शिरो गोवर्द्धनः सुधीः ।
गां शिशोमकरन्दश्च जाल्हनाख्यः समा इमे ॥
इति प्रथमसमीकरणम् ।
अरविन्दो हलनामा शुचोवाङ्गालदेवलौ ।
महेश्वरस्तथेशानो रोषोवादलिवामनौ ॥
पण्डितोऽभ्यागतश्चैव कानुः कुतूहलस्तथा ।
समानाः कथिता एते लक्ष्मणेन प्रपूजिताः ॥
इति द्वितीयसमीकरणम् ।
मिश्रग्रन्थधृतवचनम् ।

a pre-eminent sacrificer called Dhananjaya having a wife by name Gochhâshandi. Halâyudha was the son of Gochhâshandi by Dhananjaya. In the prime of his age he (Halâyudha) was a Court pundita of Lakshmana Sena, in middle age he became Lord Chancellor and in old age he was the Prime Minister of the same King."[1]

From Halâyudha's own version we know that he never belonged to either S'ândilya or Kâśyapa lineage (**गोत्र**) as stated by Muktârâma and Lâlamohan respectively; but he belonged to the lineage of Vâtsya and his father's name was Dhanajaya. Halâyudha who was honoured by Ballâla was born in the Chatta family, and hence he belonged to the lineage of Kâśyapa and he was one of the equalized Kulins; and Halâyudha, who was born in the family of Batta Nârâyana, the ancestor of Bandya and hence Tagore family, belonged to the lineage of S'ândilya. His father's name was Râmarupa, and he cannot be found in the list of the equalized Kulins. For these reasons, we can safely say that Halâyudha, the author of Brâhmanasarbasva, and Prime Minister of Lakshmana Sena, son of Ballâla Sena, is a quite different person from Halâyudha, the ancestor of the Tagore family, and from Halâyudha of the Chatta family who was honoured by Ballâla Sena.

I am unable also to admit the statement made by Vidyânidhi, when he says that Lakshmana Sena or Lakshmana

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[1] वंशे वात्स्यमुनेर्मुनेरिव सदाचारस्य विश्रामभू-
र्धर्म्माध्यक्ष धनञ्जयः समजनिष्टास्यां परं ज्योतिषः ।
यस्मिन् जुह्वति जातवेदसि हविर्व्योमाङ्गनव्यापिभिः
धूमैर्धूपितमन्त्रसिन्धुसरितो वृन्दारकैः पीयते ॥
गोच्छाषण्डी दैवतमक्षयमतिधैर्य्यसम्पदां वसतिः ।
प्रकृतिरिव परमपुंसस्तस्याभूद् यज्वनो गेहिनी ॥
बभूव तस्यां प्रकृतेर्महानिव श्रेयो निवासायतनं हलायुधः ।
यत्कीर्त्तिरम्भोनिधिवीचिदण्डदोलाधिरोहव्यसनं विभर्त्ति ॥
लब्धं जन्म धनञ्जयाद्भगवतः श्रीलक्ष्मणक्ष्मापते-
राहृत्यासदृशीं निजस्य वयसः प्राप्ता महापात्रता ।

... .

बाल्ये ख्यापितराजपण्डितपदः श्वेतांशुविम्बोज्वल-
च्छत्रोत्सिक्तमहामहत्तकपदं दत्त्वा नवे यौवने
यस्मै यौवनशेषयोग्यमखिलं क्ष्मापालनारायणः
श्रीमान् लक्ष्मणसेनदेवनृपतिर्धर्म्माधिकारं ददौ ॥

हलायुधकृतब्राह्मणसर्व्वस्व ।

Nârâyana Sena, the son of Keśaba Sena, equalized the rank of the 19 Kulins honoured by his great-grandfather—Ballâla Sena, and that Halâyudha was his prime minister, inasmuch as we find in Halâyudha's own version that he was a Court pundit of Lakshmana Sena in the very prime of his age, while he became Lakshmana's Lord Chancellor in his middle age and in old age, the Prime Minister of the same King. It is stated also by Vidyânidhi that Halâyudha was honoured by Ballâla Sena. How then could Halâyudha be in the prime of his age during the time of Lakshmana Sena, the great-grandson of Ballâla? Moreover, it is quite impossible for the same 17 Kulins, who were honoured by Ballâla, to live up to the time of Lakshmana, his great-grandson, without a single of them being dead. It is really wonderful to observe that Vidyânidhi did not hesitate even to make Umâpatidhara a Court pundita of Lakshmana the great-grandson of Ballâla. This Umâpati was a Court pundita of Vijoy Sena, the father of Ballâla Sena. He composed the verses inscribed on a stone slab attached to the temple of Prodyumneśvara S'iva established by Vijoy Sena. Vidyânidhi may try to support his view regarding Umâpati by citing the instance of Joyhari Chandra, a grandson of Mahârâjâ Krishna Chandra, who (Joyhari) was present in his time and is still present in the time of Mahârâjâ Kshitiśa Chandra, the 7th in descent from Krishna Chandra. But it is quite illogical to say that as Joyhari Chandra is living, so Umâpati lived, inasmuch as Joyhari's case is merely an exceptional one and cannot be made a general rule.

Under these circumstances we must hold that Halâyudha, the author of Brâhmanasarbasva, never belonged to either Kàsyapa (Chatta) or Sàndilya (Bandya) lineage; but that he was of the lineage of Vâtsya, being the Prime Minister of Lakshmana Sena, the son and not great-grandson of Ballâla Sena,

This Halâyudha wrote several other books besides Brâhmanasarbasva, namely, Punditasarbasva, Nyâyasarbasva, S'ivasarbasva, Mimânsâsarbasva, etc. His elder brother Paśupati wrote a treatise on S'râddha and other ceremonials, known as Paśupatipaddhati. His younger brother wrote Ânhikapaddhati, a treatise on the daily duties of Brâhmanas. These books are still in existence but not very widely known.

5. *Pavana-dūtaṁ, or Wind-Messenger, by Dhoyīka, a court-poet of Lakṣmaṇasena, king of Bengal, with an Appendix on the Sena kings.—By* Monmohan Chakravarti, M.A., M.R.A.S.

Introduction.

This poem was first brought to public notice by our Philological Secretary Mahāmahopādhyāya Paṇḍit Haraprasād Çāstrī in "Notices of Sanskrit MSS.," Second Series, vol. I, part II, pp. 221-2, (No. 225). A brief abstract of its contents was read by him in the Proceedings of this Society for July 1898, which was reproduced with some variations in his Preface to the above "Notices," pp. xxxvii-viii. He described the MS. as "a discovery of some importance," and rightly, for before this, no poem of Dhoyīka was known, and even up to now this MS. is the only copy known. Its owner Paṇḍit Raghurām Tarkaratna of Viṣṇupur, District Bānkuṛā, has, at the instance of its present subdivisional officer Babu Atal Behari Bose, kindly lent me the MS., and has thus enabled me to edit the text.

The MS.

The MS., on yellowish country paper, consists of 12 leaves (or rather 23 pages), 13½″ × 3¾″. It was apparently part of a large MS., for the leaves are numbered on the left side from 151 to 162. The text, five or six lines to a page, is 10½″ × 11½″, and has besides marginal notes. The characters are modern Beṅgali; the handwriting neat and generally legible. The colophon states that the MS. was copied by one Rāmagati in Çaka 1752 *Kārttika sita*, or A.D. 1830, October-November, bright half (of the lunar month). Rāmagati is father of the present owner. In the text are various omissions and mistakes, some of which have been corrected in the margin apparently by the copyist himself. The marginal notes are few, and give no help in difficult or deficient passages. I have therefore given the text exactly as it stands in the MS., the conjectural emendations being noted in small brackets, and the omissions in larger brackets with asterisks. Several passages, however, still remain doubtful.

Contents.

The poem has 104 stanzas, all in the metre *Mandākrāntā*. It was composed in imitation of Kālidāsa's lyric poem, *Megha-dūtaṁ*, cloud-messenger, (better known in the south as *Megha-sandeçaḥ*). The metre is the same; the story is an evident adaptation from the latter; and in several stanzas reminiscences and even actual words of the *Meghadūta* verses can be traced.

Imitations of Meghadutam.

Such imitations of Kālidāsa's poem are not infrequent in later Sanskrit literature, as the following list will show:—

1. *Uddhava-dūtaṁ*, (vv. 141), by Mādhava Kavīndra Bhaṭṭācāryya of Tālitanagara (Printed in J. Vidyāsāgara's *Kāvya-saṁgraha*, Calcutta).

2. *Uddhava-dūtaṁ* or *U.-sandeçam*, (vv. 131), by Rūpa Gosvāmī, the disciple of Caitanya (printed in *K. saṁgraha*).
3. *Kīra-dutaṁ*, (vv. 238 ?), by Rāmagopāla, the court poet of a king of *Vaṅga* (MS. No. 67, "Notices" 2nd series, Vol. I).
4. *Cātaka-sandeçaḥ*, (vv. 141), by a Brāhmin of Keraḷa, (J.R.A.S., 1884, p. 451).
5. *Nemi-dūtaṁ*, (vv. 126), by Vikrama, a Jaina poem (*Kāvya-mālā*, Vol. II, Bombay).
6. *Padāṅka-dūtaṁ*, (vv. 146), by Mahāmahopādhyāya Kṛṣṇa Sārvabhauma in Çaka 1645 under the patronage of Mahārājādhirāj Rāmajīvana (Printed in *Kāvya-saṁgraha*).
   [Commentaries by Rādhāmohan and Rāmahari.]
7. *Pavana-dūtaṁ*, the present poem.
8. *Bhramara-sandeçaḥ*, (vv. 192), by Vāsudeva of Keraḷa (J.R.A.S., 1884, p. 452).
9. *Çuka-sandeçaḥ*, (vv. 163), by Lakṣmīdāsa of Keraḷa (Printed in J.R.A.S., 1884, pp. 404–431).
10. *Çuka-sandeçaḥ*, by Karingampalli Nambudrī (Oppert's List of MSS. 2721, 6426).
    [Commentary by Eralpatu, king of Calicut.]
11. *Çuka-sandeçaḥ*, by Raṅgācāryya (Rice's Mysore List of MSS., 244).
12. *Subhaga-sandeçaḥ*, (vv. 130), by Nārāyaṇa of Keraḷa (J.R.A.S. 1884, p. 449).
13. *Haṁsa-dūtaṁ*, (vv. 40), by Kavīndrācāryya Sarasvatī (Burnell's Catalogue of Tanjore Palace Library, p. 163*a*).
14. *Haṁsa-dūtaṁ*, (vv. 142), by Rūpa Gosvāmī (Printed in *Kāvya-saṁgraha*).
    [Commentaries by Nṛsiṁha, Rāmaçaṅkara and Viçvanātha Cakravarttī.]
15. *Haṁsa-sandeçaḥ*, (vv. 110), by Veṅkaṭeça Vedāntācāryya (J.R.A.S., 1884, p. 450).
    [Commentary by Appayya Dikṣita.]
16. *Haṁsa-sandeçaḥ*, (vv. 110), by an unknown poet, writing apparently in rivalry of Veṅkaṭeça, No. 15, (J.R.A.S. 1884, pp. 450-1).

Story. The story of the poem is very simple. On the sandal-hills is a Gandharva town named *Kanaka-nagarī* (v. 1). There Kuvalayavatī, a fair Gandharva girl, saw King Lakṣmaṇa who had come on world-conquest. She fell in love with him (v. 2). But unable to express to him her feelings she passed several days in grief. Deeply distracted, she at length begged the southerly breeze (v. 3) to convey to the king of Gauḍa her message of love (v. 5). She then describes the countries and the people, the wind would have to pass over (vv. 8-35), until it would come to *Vijayapura* the capital of the king. The capital and the king are then described (vv. 36-60). Then the love message and the pangs of her sufferings the wind is asked to communicate to the king (vv. 61-100). The last four stanzas are personal or benedictive.

Geographical Details.

Pāṇḍya-deça.

Interesting geographical details are furnished in the description of the wind's journey (vv. 8-36). The breeze starts from the *Malaya* (v. 8), the hill-range forming the eastern boundary of Travancore. Crossing the valleys at the foot of the *Malaya*, it will go to *Pāṇḍa-deça*, with its capital *Uraga-pura* or *Bhujaga-pura* (v. 10) on the bank of the *Tāmraparṇī* (v. 8). *Pāṇḍa-deça* or the country of the Pāṇḍyas is comprised in the modern Districts of Tinnevelly and Madurā with S. Travancore; Tinnevelly itself stands on the left bank of the river Tāmraparṇi. The *Pāṇḍyas* are known from very early times, being mentioned in the rock Edicts of Asoka, the Vārttikas of Kātyāyana, and also in Mahābhārata and Rāmāyaṇa. The capital *Uragapura* is mentioned in Raghuvaṁça, vi. 59-60; while the *Tāmraparṇi* with the pearl fishery at its mouth in the Gulf of Mannar is still more famous. The Greek and Roman name for Ceylon, Taprobane, is believed to be derived from this river's name.

The wind will then pass by the Bridge of Rāma which looks like an arm of the earth extended to the *Lañka-drīpa* (v. 10); and here lies the god *Rāmeçvara* (v. 11). This refers, of course, to the Adam's Bridge and the well-known temple of Rāmeçvara, described to be one of the twelve *Jyotirlingas*.

Coḷas.

The wind next proceeds to *Kāñcipura*, the ornament of the South (v. 12), the capital of the *Coḷa* ladies (v. 14). *Kāñcī* or Conjeeveram is one of the oldest cities of India, being mentioned in Pātañjali's Mahābhāṣya; while the *Coḷas* have been named in the rock Edicts of Asoka, and the Vārttikas of Kātyāyana. At the time the poet wrote, the *Coḷas* were the most powerful in the South, having been raised to that eminence by Kulottuṅga Cola I (A. D. 1070-1118.)

Keraḷas.

Following (westward) the course of the *Kāverī* (v. 115), the wind will come to the land of the *Keraḷas* (v. 16). The river *Kāverī*, which fertilises the *Coḷa* country, flows past the great temple of Çrīraṅgam. The *Keraḷa* land is identifiable with the west coast from N. Travancore to Gokarṇa in N. Mysore. *Keraḷa* was known to Pātañjali, and is apparently the same as *Keraḷa-putra* of Asoka's rock Edicts.

Mālyavan Mt.

Having thus gone through the southern half of Deccan, the wind will next see the *Mālyavanta* mountain (v. 18), and *Pañcāpsara* the tank of *Māsyakarṇi Ṛṣi* (v. 19). Both these names are well known from Rāmāyaṇa.[1] *Mālyavanta*[2] is apparently the central portion of the

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[1] Rāmāyana 3. 11. 11-12; Raghuvaṁça, 13. 38.

[2] For *Mālyavanta*, see Rāmāyaṇa 4 28. 1. The difference between poetical talent and poetical genius can be well seen by comparing the

Eastern Ghāṭs between the rivers Pennār and Kṛṣṇā; and the *Pañcāpsara* tank is to be located somewhere between the Kṛṣṇā and the Godāvarī.

Kaliṅga-nagarī.

Then the wind avoiding the passes round about the *Godāvarī* will turn to the capital of *Kāliṅgas*, (v. 21); from which it will go to the sea-coast (v. 22). It is clear that the Kaliṅga capital was near the sea but not on the coast. In the 12th century this capital was at *Kaliṅga-nagara*, which has been reasonably identified with modern Mukhaliṅgam[1] in Pārḷā-Kimiḍi Tributary State, District Gañjām. This town stands on the river Vaṁçadhara, 18° 37′lat. 84.° 3′ long., about 22 miles by map from Kaliṅgapattam, the port at the mouth of this river.

Vindhya Mountains.

From the sea-coast the wind will blow over the *Vindhya-pādāḥ*, frequented by elephants (v. 23), to the *Revā* with its groves peopled by *Savarīs* and its plains by more civilised races. The hill ranges to the north of the Mahendra Mountain were considered to be a part of the Vindhya; and this hilly region was then occupied by the *Savara* tribes. The wind thus cuts direct north and reaches the source of the river *Revā* or Narmmadā in the Amarakanṭaka hill.

Yayāti-nagarī.

The wind is then asked to go to *Yayāti-nagarī* to see the amorous frolics of *Keraḷī* girls (v. 26). This town has not yet been identified, but it is mentioned in a copperplate inscription of Mahā-çiva-gupta.[2] There it is said to be on the bank of the *Mahānadī*, which may, after all, be a common name referring to some large river. Anyhow it was in the country of Dakṣiṇa-Kosala, identifiable with the eastern part of Central Provinces. Curiously enough the people are called *Keraḷas*.

From *Yayāti-nagarī*, the wind will blow on to the *Suhma-deça* on the Ganges (v. 27). Here the Brāhman ladies wear tender palm leaves as ear-ornaments (v. 27); and here the god Murāri resides (v. 28). On the bank of the Ganges is (an image of) Çiva and Pārvatī combined (v. 30). Further up comes the separation place of the Bhāgirathi and the Jamunā rivers (v. 33); and finally is reached the capital *Vijayapura* on the bank of the Gan- 36).

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description of *Mālyavanta* in v. 18 of *Pavanadūtaṁ* with Raghu 13. 26 and Uttara-rāmacarita, 1. 33.

एतद्गिरेर्माल्यवतः पुरस्तात् आविर्भवत्यम्बरलेखिशृङ्गं ।
नवं पयो यत्र घनैर्मया च त्वद्विप्रयोगाश्रु समं विसृष्टं ॥ रघुवंश ।
सोऽयं शैलः ककुभ-सुरभिर्माल्यवान् नाम यस्मिन् ।
नीलस्निग्धः श्रयति शिखरं नूतनस्तोयवाहः ॥ उ० चरित ।

[1] Ep. Ind. IV, pp. 188-9.

[2] Ep. Ind. Vol. III, p. 356.

Suhma.

Suhma is the old name of a Division of Bengal comprising northern Midnapore, District Hughly west of the Sarasvatī river and the eastern part of District Burdwan. *Tāmralipti* was its port,[1] and *Vijayapura* its capital. *Vijayapura* is apparently to be identified with Nūdīah (Nadiā or Navadvīp), which was the capital of Lakhaniya at the time of the inroad of Muḥammad-i-Bakht-yār.[2] Is this name connected in any way with Vijâyasena, grandfather of Lakṣmaṇasena ?

The time of the poet.

The poet Dhoyīka (or Dhoyī Kavirāja as per colophon) can have his time ascertained only approximately. Being mentioned in *Gīta-govinda*, verse 4, he must be a contemporary of or slightly older than Jayadeva. But Jayadeva's time has not yet been definitely ascertained. Dhoyīka's verse is quoted in Jalhana's *Subhāṣita-muktāvalī*, compiled in the second half of the 13th century[3] and in Çrīdharadāsa's *Sadūkti-karṇāmṛta* compiled in A.D. 1205-6.[4] So he must be earlier than 1205. He cannot be much earlier, for in the present poem he makes Lakṣmaṇa of the Sena dynasty its hero.

The chronology of the Sena dynasty in Bengal is involved in much confusion. It is therefore discussed at length in an Appendix. I have therein come to the conclusion that Lakṣmaṇasena ruled from A.D. 1170-1 to about 1200. He must have ruled for some time, before he could be mentioned as having gone out on world-conquest (v. 2). Consequently the composition of the poem may be reasonably inferred to have taken place in the fourth quarter of the 12th century.

The text with an index of çloka-beginnings and of proper names, chiefly geographical, is appended.

APPENDIX.

The Sena Dynasty of Bengal.

The Sena Dynasty.

The chronology of this dynasty was, up to a recent period, largely based on traditions given in the *Kula-pañjikās* of *ghaṭaks* (matchmakers), and in such works as *Kṣitīça-vamçāvalī-caritaṁ* and Áín-i-Akbari. Recent researches are, however, clearing the ground. As the author of *Pavana-dūtaṁ*, Dhoyīka, was the court poet of Lakṣmaṇasena, it has become necessary to ascertain the approximate time of this king, and thus indirectly of the whole dynasty.

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[1] *Daçakumāra-carite* 6th *uccahāsa* " *Suhmeṣu Dāmalipt-āhvayasya.*"

[2] Raverty's translation, p. 554.

[3] Notices of Bombay Sanskrit Mss., 1897, p. XXVI (*Goi-dhoi Kavirāja*).

[4] R. L. Mittra's Notices of Sanskrit Mss , Vol. III, pp. 135, 145.

Documents for determining their Succession.

From the following documents the succession of the Sena kings has been well established:—

(*a*) The *Vallāla-caritaṁ* of Ānanda Bhaṭṭa (Bibliotheca Indica edition) p. 61; Adhyāya 12, çlokas 50-3;

(*b*) The MSS. of *Dāna-sāgara* and *Adbhuta-sāgara* attributed to Ballālasena (their introductory verses);[1]

(*c*) The stone inscription of Vijayasena at Deopārā (Ep. Ind. I., pp. 307-8).

(*d*) The copperplate inscriptions.

(i) Tarpaṇadighi, of Lakṣmaṇasenadeva (J.A.S.B., XLIV, p. 11).

(ii) Bākargañj, of Viçvarūpasenadeva (J.A.S.B., VII, p. 43).

(iii) Madanapāḍa; of Viçvarūpasenadeva (J. A.S.B., LXV, p. 9.)

Their Succession.

These show that the dynasty was founded by Sāmantasena; then his son Hemantasena who married Yasodevī; then his son Vijayasena; then his son Vallālasena; then his son Lakṣmanasena who married Çrī-tāndrā (?); and lastly his son Viçvarūpasena.

The succession thus proved disposes of the assumption of Dr. R. L. Mittra that two Lakṣmaṇasenas existed in the Sena dynasty.[2] It also sets aside the traditionary list in the Āin-i-Akbari[3].

Their Chronology.

The next question is about the times of the Sena kings. The determination of these times largely depends upon the ascertainment of Lakṣmaṇasena's rule. For the beginning of Lakṣmaṇasena's rule various dates have been given A.D. 1106,[4] 1119-20,[5] 1170,[6] and 1172.[7] On account of conflicting data, the solution of the problem is not free from doubts.

Laksmansena Era.

The first historical fact to be noted is an era, known as Lakṣmaṇsena's samvat, abbreviated to ल० स०. This era is still used in Mithilā, and according to some modern calculations it began in A.D. 1106. But calculating from six of the earliest dates (five in MSS. and one in inscription), Prof. Kielhorn arrived at the conclusion that the era really began in A.D. 1119-20. According to him the La° Sa° was an ordinary southern (*Kārttikādi*) year with the amānta scheme of lunar fortnight; and the first day of the era was *Kārttika sudi* one of the expired çaka year 1041 = 7th October A.D. 1119.[1] I think this is a right conclusion, *particularly as it is supported by* a statement in the Akbarnāma[2] and other evidences.

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[1] Of the *Dāna-sāgara*, extracts from three MSS. are available (R. L. Mittra, Notices of Sanskrit MSS. I, p. 151; Eggelling, India office MSS. Catalogue, p. 545; and "Notices," 2nd Series by Haraprasād Çātrī, Vol. I, p. 170). Of the *Adbhuta-sāgara* extract from one MS. is known, Report on Sanskrit MSS., Dr. R. G. Bhanḍārkar, 1897, pp. 83—85.

[2] J.A.S.B., XLVII, pp. 398, 402.

[3] Jarrett's Transl. Vol. II, p. 146.

[4] J.A.S.B. XLVII, p. 398; *Vallāla-caritaṁ*, Adh. 27, çl. 4, p. 121.

[5] Epig. Ind. Vol. I, p. 306; J.A.S.B., LXIX, p. 62.

[6] J.A.S.B., LXV, p. 31.

[7] Report on Sanskrit MSS. in Bombay, 1897, p. LXXXVIII

The era taken to begin from his first year.

Objections.

The era is generally taken to begin from the first year of Lakṣmaṇasena's reign which, according to an anecdote in the Ṭabakāt-i-Nāṣirī,[3] began with his birth. But this view is open to serious objections. Firstly, it involves the assumption of a rule of more than eighty years—a fact unprecedented in Indian history and I suppose in the recorded history of the world too, even if the rule began from his birth. Moreover, in the *Adbhuta-sāgara* Ballālasena is described to have raised his son to the throne before his own death.[4] If so, Lakṣmaṇasena must have been of same age at the time of accession; and his reign for more than eighty years becomes still less credible. Secondly, in the MSS., the *Dāna-sāgara* is said to have been composed by Vallālasena in Çaka year *Çaçi-nava-daça* (1091); while the *Adhbuta-sāgara* is said to have been begun by Ballālasena in the Çaka year *Kha-nava-kh-end-vābde* (1090).[5] These show that Ballālasena was reigning in Çaka 1090 and 1091 (A.D. 1168-69 and 1169-70), which is incompatible with the assumption of Lakṣmaṇasena's rule beginning in A.D. 1119-20. The MS. of *Adbhuta-sāgara* distinctly says that though begun by Ballālasena, it was completed by his son Lakṣmaṇasena, whom he (Ballāla) raised to the throne before his death. If this be true, Lakṣmaṇasena could not, possibly, have been king before A.D. 1168-69. Thirdly, it is curious to find that not a single date in the Lakṣmaṇasena era has yet been found earlier than 51, *i.e.*, earlier than A.D. 1170-1.[6]

The wording of the two inscriptions in this era.

The two known inscriptions of this era are peculiarly worded, and run as follows:—

(1) *Çrīmal-Lakṣmaṇsenasy-átíta-rājye saṁ* 51 *Bhādra-dine* 29.[7]

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[1] Ind. Ant., XIX (1890), p. 6.; Ep. Ind. I, p. 306, note 6.

[2] "For example, in Bengal, the era dates from the beginning of the rule of Lachman Sen, from which date till now 465 years have elapsed;" Akbarnāma, Beveridge's transl , vol. II, pp. 21-2. 465 La. Sa. = 1506 Çaka = 1641 V. Saṁvat.

[3] Major Raverty's Translation, p. 555.

[4] Notices of Bombay MSS., 1897, pp. LXXXV-VI.

[5] Catalogue of India Office MSS., p. 545; and Bom. MSS., 1897, p. LXXXVI.

[6] Jour. Bom. Br. R.A.S., XVI, p. 358.

[7] Jour. Bom. Br. R.A.S., XVI, p. 358.

(2) *Çrīmal-Lakṣmaṇasena-devapādām-atīta-rājye saṁ* 74 *Vaiçākha-vadi* 12 *Gurau.*[1]

Literally, these would mean—" years 51 or 74 expired of Laksmaṇasena's reign," *i.e.*, his regnal years. But may not the years *really* refer to that of a general era which fell in that king's reign? Several such instances are known in Indian epigraphy, *e.g.*—

(1) In the Junāgaṛh inscription of Rudradāman—
l. 4—" *Rudradāmno varshe dvi-saptatitame* 70 2."[2]

(2) In the Gaṛhvā inscription of Candragupta II—
l. 10—" *Çrī-Candragupta-rājya saṁvatsare* 80 8.[3]"

(3) Bilsāṛ inscription of Dhruvaçarman—
l. 6—" *Çrī-Kumāraguptasy-ābhivarddhamāna-vijaya-rājya-saṁvatsare shaṇ-ṇavate.*"[4]

(4) Gaṛhvā inscription of Kumāragupta I—
l. 2—" *Çrī-Kumāragupta-rājya-saṁvatsare* 90 8. "[5]

(5) Kosam inscription of Bhīmavarman—
l. 1—" *Mahārājasya Çri-Bhīmavarmaṇah saṁvat* 100 30 9."[6]

(6) Halsī plates of Kākusthavarman—
l. 4—" *Sva-vāījayike açītitame samvatsare.*"[7]

In (1) the year is referred to Çaka era and in (2) to (5) the years to Gupta era; they are not considered to be regnal years.

More facts are needed to arrive at a reliable conclusion. On the existing data the safest theory at present is to take the first year of the era as the first year of the dynastic founder, and to believe that on the accession of Lakṣmaṇasena, the era was either formally adopted or made so widely prevalent that the era came to be known as Lakṣmaṇasena's. This theory meets the objections above raised on the ground of length of years or the dates of compilation of the *Dāna-sāgara* and the *Adbhuta-sāgara.* It also helps to explain the following additional facts :—

The era is from the founder's first year.

In the Deopārā inscription, v. 20, Vijayasena is described to have assailed the lord of Gauḍa, to have put down the prince of Kāmarūpa and defeated the Kaliṅga. In the succeeding verse, 21, are named Nānya, Rāghava, Vardhana and Vīra, as (kings) who were kept in prison.[1] Presumably these names include the names of the defeated kings. Who was the defeated king of Kaliṅga? Is he Rāghava? Such was undoubtedly the name of a Kaliṅga king who ruled between A.D. 1156-1171.[2] The early years of Rāghava (A.D. 1156-60) would fit in with the last years of Vijayasena, if the above view be adopted.

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[1] Ind. Ant. X, p. 346.
[2] Ep. Ind., VIII., p. 41 and note 6.
[3] Fleet's Gupta Inscriptions, p. 37.
[4] „ „ „ p. 43.
[5] „ „ „ p. 41.
[6] „ „ „ p. 267.
[7] Ind. Ant. VI, p. 23.

According to Ṭabakāt-i-Nāṣirī,[3] the news of the victories of Muḥammad-i-Bakht-yār and of his conquest of Bihār reached the ears of Rāe Lakhmaṇiah, when he had been on the throne for a period of eighty years; and the following year he invaded the Rāe's capital Nūdīah and sacked it. Now, a rule of eighty years and more is not in itself credible, as I have already pointed out. But if the year be taken as Saṁvat 80 of the era during the reign of Lakṣmaṇasena, as Professor Kielhorn pointed out,[4] the incredibility disappears. This would make the inroad and the sack of Nūdīah fall in Saṁvat 81 or A.D. 1199-1200. This date very nearly agrees with the date arrived at from Mussulman histories by Dr. Blochmann, as A.H. 594 or A.D. 1198.[5]

No doubt Major Raverty held the date of inroad as A.H. 590 or A.D. 1194,[6] because Muḥammad-i-Bakht-yār who died in A.H. 602 is said to have reigned 12 years. But this does not necessarily mean 12 years after his sacking of Nūdīah; it may as likely refer to the time of his first charge, when holding the fief of Kashmandī (or Bhugwat and Bhiūlī).[7] On the other hand, Dihli was occupied in A.H. 589, and Dr. Blochmann shewed that after this occupation various events occurred with respect to Muḥammad-i-Bakht-yār which would have taken several years. "It would, indeed, be a close computation if we allowed but five years for the above events, *i.e.*, if we fixed the conquest of Bengal as having taken place in 594 H., or A.D. 1198."[8]

Lakṣmaṇasena's reign came to an end shortly after Muḥammad-i-Bakht-yār's inroad.[9] From the introduction to *Sadūktikarṇāmṛta*, it does not appear that Çrīdharadāsa was *Mahāmaṇḍalika* under Lakṣmaṇasena, though he says his father had served him.[10] Evidently therefore this king did not live at the time of composing that work in A.D. 1205-6. 1200 A.D. might accordingly be taken as the approximate termination of Lakṣmaṇasena's rule.

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[1] Ep. Ind. I, p. 309, lines 19-20.
[2] J. As. Soc. Beng., LXXII, p. 113.
[3] Transl. pp 554, 555, 557.
[4] Ind. Ant., XIX, p. 7.
[5] J.A.S.B., XLV, p. 276.
[6] Ṭab. Nāṣ transl., note 4 below p. 559, note 8 below p. 573.
[7] ,, pp. 549-550.
[8] J.A.S.B., XLV, p. 276.
[9] Transl., p. 558.
[10] R. L. Mittra, Notices of Sanskrit MSS., III, p. 141.

Chronology of the Sena Kings.

To summarise, the chronology of the Sena kings would then stand as follows :—

Sāmantasena, founder (A.D. 1119-20)
|
His son
Hemantasena = Yasodevī
|
His son.
Vijayasena, contemporary of Rāghava (also of Coṛagaṅga)[1]
(1140—1158-60 ?)
|
His son
Ballālasena (1158-60 —1170)
|
His son
Lakṣmaṇasena (1170-1200 *Circa*) = Çrī-tāndrā (?)
Saṁ 51, 74, 80, 81.
Inroad of Muḥammad-i-Bakht-yār (A.D.1199 *Circa*)
|
His son
Viçvarūpasena.

It is noted in the Ṭabakāt-i-Nāṣirī : "His [Lakhmaniah's] descendants, up to this time, are rulers in the country of Bang."[2] By "up to this time," I suppose, is meant either the years in which the author was in Bengal. A.H., 641-2 (A.D. 1244-5) or the year in which it was finished A.H. 658 (A.D. 1260).

Their caste.

Some discussion took place in the time of Dr. Rājendralāl Mittra as to the caste of the Sena kings. In the Deopārā inscription of Vijayasena, Sāmantasena is described as "*Brahma-Kṣatriy-āṇāṁ kula-çiro-dāma.*"[3] The same term *Brahma-Kṣatra* is used in the *Vallála-caritaṁ* for these kings.[4]

What does *Brahma-Kṣatra* mean ? Prof. Kielhorn translated the above passage "head-garland of the clans of Brāhmaṇas and Kṣatriyas.[5]" *In Çuka-sandeça* v. 34, *Kerala* land is described as "*Brahma-ksatraṁ janapadaṁ* ;" and in note 11, the word is taken to mean "Brāhman-kinged.[6]" Were the Sena kings then Brāhmaṇised Kṣattriyas ? In the inscriptions they are said to be of lunar race.

Their origin.

Did the founder come from the south ? In the Deopārā inscription it is said that in the lunar race arose Dākṣiṇātya rulers, Vīrasena and the rest (v. 4) ; that in that Sena family was born Sāmantasena (v. 5) who singly killed the robbers of Karṇāṭa (v. 8), and who in his old age frequented the hermitages on the banks of the Ganges

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[1] *Vallāla-caritaṁ*, Adh. 12, v. 52, p. 61.

[2] Transl., p. 558.

[3] Ep. Ind., I, p. 306.

[4] Adhyāya 12, v. 54, p. 61 ; cf. v. 45.

[5] Ep. Ind., I., p. 312.

[6] J.R.A.S., 1884, p. 409 ; for note 11, pp. 433-4.

(v. 9); and that from him was born Hemantasena (v. 10). With this may be compared Dhoyīka's selection of the southerly breeze, and his high eulogy of the *Cola*-land as the ornament of the south. Is it likely that Sāmantasena is connected with Coṛagaṅga of Kaliṅga? Çoṛagaṇga conquered and apparently killed the Mandāra king on the bank of the Ganges (Maṅdāra seems identifiable with Suhma), after he had conquered Utkala[1]; and Utkala must have been conquered by him several years before Çaka 1040 (A D. 1118-9), an inscription of which year describes him as "*sakal-Otkala-sāmrājya-padavī-virājmānaiḥ.*"[2] Is it therefore possible to infer that Coṛagaṅga, after killing the king of Suhma, put Sāmantasena in charge as feudatory?

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[1] J.A.S.B., 1895, p. 139, note 1; Do. 1896, p. 241; cf. also J.A.S.B. 1903. p. 110.

[2] Ind. Ant. XVIII, p. 169.

INDEX OF PROPER NAMES.

[*The numeral figures refer to the number of verses.*]

Uraga-pura, a town,—8, cf. 10.
Kanaka-nagara, Gandharva town—1.
Kavi-narapati,—103 (cf. colophon).
Kavi-Kṣmābhṛtāṁ Cakravarttī, (title) —101.
Kāñcī, town—12, 15.
Kāliṅga-nagara, town—21.
Kāverī, river—15.
Kuvalayavatī, the heroine,— 2, 62.
Keraḷī, nation—16, 26.
Gaṅgā, river—16, 27, 32, 39, 102, cf. 33.
Godāvarīka, residents of river Godāvarī—21.
Gauda-deça, country—6.
Gauḍa-rāja—96.
Gauḍa-Ksauṇī king of Gawda—5.
Gauḍ-endra king of Gauda—101.
Candan-ādri, Malaya hill range—1.
Coḷa, nation—14.
Tapana-tanayā, river Jamunā—33.
Tāmraparṇī, river—8.
Dākṣinātya, tract—17, 63.
Deva-rājya, country—28.
Dhoyīka, poet—101.
Dhoyī-Kavirāja, poet (with title)—colophon.
Pañcapsara, tank—19.
Pāṇḍa-deça, country—8.
Bhāgīrathi, river—33.
Bhujaga-pura, town—10.
Malaya, a hill range—
Malaya-kaṭaka—63.
Malaya-kṣmādhara,—5, cf. 1.
Malayaja-rajaḥ—71.
Malaya-pavana—3, 85.
Malaya-maruta—9, 92.
Malaya-opatyakā—62, 88.
Māsyakarṇī, saint,—19.
Mālyavanta, hill range—18.
Yayāti-nayarī, town—26.
Rāmeçvara, god and place—11.
Revā, river Narmmadā—25.
Laṅkā-dvīpa, Ceylon Island—10.
Lakṣmaṇa, the king and hero—2.
Lopāmudrā, wife of Agastya Ṛṣī—44.
Vindhya, a range of hills—23, 24.
Vijayapura, capital—36.
Çavarī, tribe—25.
Çrī-khaṇḍ-ādri, hill—8, 62.
Sena-ānvaya, the Sena dynasty—28.
Suhma, country—27.
Sva-rnadī, river Ganges—30.

पवन-दूतः(*) ।

श्रीरामाय नमः ॥

अस्ति श्रीमत्यखिलवसुधासुन्दरे चन्दनाद्रौ
गन्धर्व्वाणां कनकनगरी नाम रम्यो निवासः ।
हैमैर्लीलाभवनशिखरैरम्बरं व्यालिखद्भि-
र्धत्ते शाखानगरगणनां यः सुराणां पुरस्य ॥ १ ॥
तस्मिन्नेका कुवलयवती नाम गन्धर्व्वकन्या
मन्ये जैत्रं मृदु कुसुमतोऽप्यायुधं या स्मरस्य ।
दृष्ट्वा देवं भुवनविजये लक्ष्मणं क्षौणिपालं
बाला सद्यः कुसुमधनुषः संविधेयीबभूव ॥ २ ॥
बाल्यादालीष्वपि मनसिजं सानभिव्यञ्जयन्ती
पाण्डुक्षामा कतिचिदनयत् कातरा वासराणि ।
गन्तुं देशान्तरमथमधावन्यथैव प्रवृत्तं
गाढोत्कण्ठा मलयपवनं सप्रणामं ययाचे ॥ ३ ॥
त्वत्तः प्राणाः सकलजगतां दक्षिणस्त्वं प्रकृत्या
जङ्घानं(लं) त्वां पवन मनसोऽनन्तरं व्याहरन्ति ।
तस्मादेव त्वयि खलु मया संप्रणीतोऽर्थिभावः
प्रायो भिक्षा भवति विफला नैव युष्मद्विधेषु ॥ ४ ॥ (Fol. 1^b)
वीक्षा(क्ष्या)वस्थां विरहविधुरां रामचन्द्रस्य हेतो-
र्यातः पारं पवन सरितां पत्युरप्याञ्जनेयः ।
तत्तातस्याप्रतिहतगतेर्यास्यतस्ते मदर्थं
गौड़ीक्षौणी कति नु मलयक्ष्माधराद्योजनानि ॥ ५ ॥
तत्रावश्यं कुसुमसमये स त्वया शीलनीयः
सान्द्रोद्यानस्थगितगगनप्राङ्गणो गौड़देशः ।

तन्मे (ऽ*)वश्यां कथय नृपतेर्जी(र्ज्जी)वनत्राणहेतोः
प्रादुर्भावस्त्रिजगति खलु त्वादृशानां परार्थः ॥ ६ ॥
हृत्वानर्घ्यं परिमलमितश्चन्दनानोहका(कहा)नां
तूर्णं तावद्विहृजमलयोपत्यकाकाननानि ।
यावन्नैते निधुवनकलाकेलिभाजो भुजङ्गा
भोगव्याजाच्चुलुकचुल(लु)कं मत्सरात्त्वां पिवन्ति ॥ ७ ॥
श्रीखण्डाद्रेः परिसरमतिक्रम्य गव्यूतिमात्रं
गन्तव्यस्ते किमपि जगतीमण्डनं पाण्डदेशः ।
तत्र ख्यातं पुरमुरगमित्याख्यया ताम्रपर्ण्या-
स्तीरे मुग्धक्रमुकतरुभिर्व्वद्धरेखैर्भजेथाः ॥ ८ ॥
सम्भोगान्ते श्लथभुजलतानिःसहानां वधूनां (Fol. 2^{a})
व्याधुन्वन्तो(ऽ*)नुचितकवरी-भारमव्याजमुग्धं ।
अस्मिन् सद्यः श्रमजलनुदः सौधजालैरुपेत्य
प्रत्यासन्ना मलयमरुतस्तालवृन्तीभवन्ति ॥ ९ ॥
क्रीड़ाशैलं भुजगनगरीयोषितां कौतुकञ्चेत्
सेतुं याया जलधिकिरणः शृङ्खलादामदीर्घं ।
भाति स्नेहादवनितल(न)याजीवनाश्वासहेतो-
र्लङ्काद्वीपं प्रहित इव यो वाहुरेकः पृथिव्याः ॥ १० ॥
क्रुध्यद्गौरी(कर*)किश(स)लयाकृष्टचूड़ासुधांशो-
द्र(द्रे)क्ष्यस्यूच्चैः फल(पद ?)मकलुषं तत्र रामेश्वरस्य ।
मे(म)ध्यं यत्र त्रिवलिविषमं वारसीमन्तिनीनां
हस्तोत्कम्पं कथयति विधेः हृष्टकाञ्चीपदस्य ॥ ११ ॥
लीलागै(गा)रैरमरनगरस्यापि गर्व्वं हरन्तीं
गच्छेः काञ्चीपुरमथ दिशो भूषणं दक्षिणस्याः ।
नक्तं यत्र प्रहरिक इवोज्जागरं नागराणां
कुर्व्वन् प्रा(पा)णिप्रणिह(हि)तधनुर्ज्जायते पञ्चवाणः ॥ १२ ॥
व्याक्री(क्रं ?)लि(ली)लाविहसितमिव श्यावतामभ्युपेता

सद्यः फेणव्यतिकरमिषादर्पयत्यं शुकान्तं ।
अम्भःक्रीड़ाकुतुकर (Fol. 2^{b}) भसम्भ्रष्टचीनोत्तरीये
यन्नारीणामुरसि सुवला वीचिहस्तैः सखीव ॥ १३ ॥
मन्ये मोक्षः कठिनसुरतायासलब्धस्य तूर्णं
दुष्पा(ष्प्रा)पस्ते पवन भविता चोलसीमन्तिनीभ्यः (।*)
के वा तासामलकरचनाली(नी)ललीलासनाथे
गण्डाभोगे मलयजपयः पिच्छिले न स्खलन्ति ॥ १४ ॥
हित्वा कि(का)ञ्चीमविल(न)यवतीभुक्तरोधोनिकुञ्जां
तां कावेरीमनुसर खगश्रेणिवाचालकूलां ।
कान्ताश्लेषादपि खलु सुखस्पर्शमिन्दुत्विषोऽपि
स्वच्छं भित्त्वाप्रवल(ण)मनसो(ऽ*)प्यम्बु यस्या लघीयः ॥ १५ ॥
या गङ्गेव प्रकृतिसुभगा जायते केरलीनां
केलिस्नाने कुचमलयजैः पाण्डिमानं दधाना ।
श्व(श्र)श्वद्गोत्रस्खलनजनितत्रासलोलस्य सिन्धो-
रुद्वीचिभ्रूश्चरणपतनप्रेमवाचां रसज्ञा ॥ १६ ॥
तस्या लीलासरित इव ताः स्रोतसि श्रोणिदघ्ना
तोय(: *) क्रीडां यदि विदधते दाक्षिणात्यास्तरुण्यः ।
वीचिक्षेपैः स्तनपरिसरेष्वस्तहारेषु तासां
मुक्ताजालं रचय तदपां विन्दुभिः कुन्दगौरैः ॥ १७ ॥
स्नि(Fol. 3^{a})ग्धा(ग्ध)श्यामं गुरुभिरुपलैः पर्व्वतं माल्यवन्तं
पश्येरुत(त्त)म्भितमिव पुरः केशपाशं पृथिव्याः ।
तत्राद्यापि प्रतिस(भ ?)रजलैर्जर्ज्जराः प्रस्थभागाः
सीताभर्त्तुः पृथुतरशुचः सूचयन्त्यश्रुपातान् ॥ १८ ॥
रम्योपान्तं सरलतरुभिर्मास्यकर्णैः सरस्तद्-
च्छैः पम्पापर इति हृतप्रौढ़तापं मघोनः ।
यत्राद्यापि त्रिदशतरुणीमुग्धसङ्गीतिमालाः
पूर्व्वप्रेमोपगतहरिणश्रेणिमुत्कण्ठयन्ति ॥ १९ ॥

क्रीड़ाशोकक्रमुकवकुलारामरम्योपकण्ठाः
संपत्स्यन्ते पथि पथि तव प्रीतये प्रस्थितस्य ।
पीनोत्तुङ्गस्तनभरनमत्पामरीप्रेमलोभा-
न्निर्व्विच्छेदभ्रमितपथिकाः पल्लयः पल्ललिन्यः ॥ २० ॥
रम्भ्रान् हित्वा जलनिवि(धि)ड(d)पवधूगाढ़गोदावरीकान्
कालिङ्गस्यानुसर नगरीं नाम तां राजधानीं ।
संभोगान्ते मुकुलितद(दृ)शां तत्र वाराङ्गनाना-
मङ्गग्लानिं हर परिपतन् केलिवातायनेषु ॥ २१ ॥
लेख(खेल)द्वीचिप्रचयरचितानेकसोपानरेखं
तीरं यायाः फल(Fol. 3^b)भरनमत्पूगमालं पयोधेः ।
गायन्तीनां श्रवणसुभगं तत्र सिद्धाङ्गनानां
स्थाने स्थाने जनय शनकैस्तानशब्दानुवादान् ॥ २२ ॥
कुञ्जक्रीड़ात्रिदशतरुणीकेलिनिश्वासवातै-
र्म्ला(र्म्ला)यद्वल्लीकिश(स)लयरुचो निर्व्विशेर्व्विन्ध्यपाला(दा)न् ।
पश्यन् वक्त्रान्यनतिचतुरवारसीमन्तिनीनां
माद्यद्गन्धद्विरदरसितत्रासला(लो)लेक्षणानि ॥ २३ ॥
स्वेच्छारम्यं विहर विहगव्याकुलतुङ्गवृक्षे
विन्ध्योत्सङ्गप्रणयिनि वने मानवत्यो(ऽ*)पि यत्र ।
संजायन्ते रहसि करिणां कु(कू)रमाकर्ण्य शब्दं
भर्त्तुः (कण्ठ*)प्रणिहितभुजावल्लयो भिन्नयोषाः ॥ २४ ॥
स्वैरक्रीड़ारसिकशबरीसिक्तरोधोनिकुञ्जं
गच्छेरेवामभिनवशुकश्यामवंशीवलेन ।
मन्यन्ते यत्परिसरभुवि प्रौढ़सीमन्तिनीनां
लीलामानग्रहमपि रतेरन्तरायं युवानः ॥ २५ ॥
लीलां नेतुं नयनपदवीं केरलीनां रतेश्चेत्
गच्छेः ख्यातां जगति नगरीमाख्यया तां ययातेः ।
गाढ़ाशि(श्लि)ष्टक्रमुकतरवः प्राङ्गणे नागवल्लयोः(ल्ल्यः)

बालां यत्र प्रियतमपरीरम्भमध्यापयन्ति ॥ २६ ॥
गङ्गावीचिप्लुतपरिसरः सौधमालावतं(Fol. 4^{a})सो-
वास्यत्युच्चैस्त्वयि रसमयो विस्मयं सुह्मदेशः ।
श्रोत्रक्रीड़ाभरणपदवीं भूमिदेवाङ्गनानां
तालीपत्रं नवशशिकलाकोमलं यत्र याति ॥ २७ ॥
तस्मिन् सेनान्वयनृपतिना देवराज्याभिषिक्तो
देवः सु(सा)क्षाद्वसति कमलाकेलिकारो मुरारिः ।
पाणौ लीलाकमलमश(स)क्षद्यत्-समीपे वहन्त्यो
लक्ष्मीशङ्कां प्रकृतिसुभगाः कुर्व्वते वाररामाः ॥ २८ ॥
यातस्यो(स्वो)र्द्धं धनपतिनगेनैव गौ(सौ)धैरगारैः
पश्येस्तस्मिन्नगरमनघं चारुचन्द्रार्द्धमो(मौ)लेः ।
यत्रानेकप्रियसख (d) नखपदव्याजतोवाररामाः
भर्त्तुर्भूषाशशधरकलाचिह्नमङ्के वहन्ति ॥ २९ ॥
तत्रानर्घ्यं रघुकुलगुरुं स्वर्ण(र्ण)दीतीरदेशे
नत्वा देवं व्रज गिरिसुतासंविभक्ताङ्गरम्यं ।
याते यस्मिन्नयनपदवीं सुन्दरभ्रूलतानां
प्रौढ़स्त्रीणां गलति म(d)र(म)णप्रेमजन्माभिमानः ॥ ३० ॥
तत्क्षेत्रस्थ (Fol. 4^{b}) त्रिदिवसरितस्त्वान्तरा सेवनीयः
श्रीवल्लालक्षितिपतियशोबान्धवः सेतुबन्धः ।
आरूढ़ानां त्रिदिवतटिनीस्नानहेतोर्जनानां
यत्र द्वेधाप्यमरनगरी सन्निकृष्टा विभाति ॥ ३१ ॥
गङ्गां फेनस्तवकमुकुरं वीचिहस्ते वहन्तीं
सेवेथास्तामथ परिसरप्रौढ़हंसावतंसां ।
प्रत्यावृत्य व्रजति जलधौ प्रेयसि प्रेमलोला
कर्त्तुं केशग्रहमिव किमप्युद्धता या विभाति ॥ ३२ ॥
तोयक्रीड़ारसनिपतत्(*त)द्ब्रह्मसीमन्तिनीनां
वीचिधौतैः स्तनमृगमदैः श्यामलीभूय भूयः ।

भागीरथ्यास्तपनतनया यत्र निर्याति देवी
देशं यायास्तमथ जगतीपावनं भक्तिनम्रः ॥ ३३ ॥
संसर्पन्तीं प्रकृतिकुटिलां दर्शितावर्त्तचक्रां
तामालोक्य त्रिदशसरितो निर्गद(ताम)म्बुगर्भात् ।
सा(मा ?) निर्मुक्तासितफणिवधूशङ्कया कातरा(रो) भू-
भीतः सर्व्वो भवति भुजगात् किं पुनस्त्वदृशो यः ॥ ३४ ॥
क्रीड़न्तीनां पयसि रभसात्तत्र लीलावतीनां
वीची(चि)हस्तै रचय कुचयोरंशुकस्रंसनानि ।
सद्यस्तासामपि च रमणालोकनव्याकुलानां
यान्तु क्रीड़ा (Fol. 5^a) मसृणहसितान्युत्तरीयाञ्चलत्वं ॥ ३५ ॥
स(स्क)न्धावारं विजयपुरमित्युन्नतां राजधानीं
दृष्ट्वा तावद्भुवनजयिनस्तस्य राज्ञोऽधिगच्छेः ।
गङ्गावातस्त्वमिव चतुरो यत्र पौराङ्गनानां
सम्भोगान्ते सपदि वितनोत्यङ्गसंवाहनानि ॥ ३६ ॥
यत्सौधानामुपरि वड़भीशालभञ्जीषु लीलाः
सुस्निग्धासु प्रकृतिमधुराः केलिकौतूहलेन ।
उन्नीयन्ते कथमपि रहः पाणिपङ्केरुहाग्र-
स्पर्शोद्गच्छत्पुलकमुकुलाः सुभ्रुवो वल्लभेन ॥ ३७ ॥
स्निग्धश्यामा रमणमान(मणि)भिर्बद्धमुग्धालवालाः
पौरस्त्रीभिः क्रमुकतरवो रोपिताः प्राङ्गणेषु ।
यत्रायत्नोपगतसलिलैर्नक्तमासिक्तमूला
नापेक्ष्यन्ते परिजनवधूपाणिविश्रोणिताम्भः ॥ ३८ ॥
गङ्गाल्ले(श्ले)षप्रकृतिविमले पालिते तेन राज्ञा
जाता लोकद्वितयविगलद्भीतयो यत्र पौराः ।
बाला भ्योऽथ प्रणयकलहे रूढ़कोपाङ्कुरे(रा)भ्या(भ्यो)
वित्रस्यन्ति भ्रुकुटिरचनाचारुभीमाननाभ्यः ॥ ३९ ॥
स्नातुं कर्णात् प्रणिहितपदं साञ्जनैरश्रुलेशै-

रुद्धं ताप (Fol. 5^{b}) ग्लपितविसिनीतन्तुना बन्धनेन ।
यत्र स्त्रीणामधररुचकन्यस्तसिन्दुरमुद्रं
तालीपत्रं प्रणयिनि जने प्रेमलेखत्वमेति ॥ ४० ॥
भर्त्तुः स्वैरं सुरतजनितस्वेदविन्दून् विनेतुं
यत्र स्नेहादगलितनिजग्लानिभिर्म्मुग्धदारैः ।
सौधा(धो)त्सङ्गे शशधररुचस्तन्तुजालप्रविष्टा
व्याहृ(ह्न)व्यन्ते रुचिरचमरीबालभारभ्रमेण ॥ ४१ ॥
रुद्धोष्माण स्तनपरिसराः कुङ्कुमस्याङ्गरागा
दोलाः केलिव्यसनरसिकाः सुन्दरीणां समूहः(हाः) ।
क्रीड़ावाप्यः प्रतनुसलिला मालतीदाम रात्रिः
स्थानज्योत्स्ना मुदमविरतं कुर्व्वते यत्र यूनां ॥ ४२ ॥
भ्राम्यन्तीनां भ(त ?)मसि निविड़े वल्लभाकाङ्क्षिणीनां
लाक्षारा(गा*)स्वरणगलिताः पौरसीमन्तिनीनां ।
रक्ताशोकस्तवकललितैर्ब्बालभानोर्मयूखै-
र्नालक्ष्यन्ते रजनिविगमे पौरमार्गेषु यत्र ॥ ४३ ॥
रत्नैर्म्मुक्तामरकतमहानीलसौगन्धि (Fol. 6^{a}) काद्यैः
शङ्खैर्व्वालावलयरचनाबन्धु(भि *)र्विद्रुमैश्च ।
लोपामुद्रारमणमुनिना पीतनिःशेषवारः
श्री(:)सर्व्वस्वं हरति विपदं(पुलं) यत्र रत्नाकरस्य ॥ ४४ ॥
मूकीभूतां मरकतमयीं हारयष्टिं दधाना
यस्मिन् बाला मृगमदमसीपिच्छिलेषु स्तनेषु ।
चेतोवर्त्तिस्मरहुतवहं दीपितं स्नेहपूरैः
छत्वा यान्ति प्रियतमगृहानन्धकारे घनेऽपि ॥ ४५ ॥
नीतं यत्नादविनयलिपेः पत्रतामायताक्ष्या
निर्गच्छन्त्यः सपदि हृदयं क्षालयित्वेव यत्र ।
कान्ते पादप्रणयिनि मिलत्कज्जलश्यामलाना-
मुन्मुच्यन्ते नयनपयसां श्रेणयो मानिनीभिः ॥ ४६ ॥

अग्रे तेषां व्यपगतमदः स्थातुमेवासमर्था
दृष्ट्वा कान्तिं कुसुमधनुषः का कथा विक्रमस्य ॥
सुभ्र(भ्रू) लीलाचतुरनयनक्षेपरम्यैर्विलासै-
र्यस्मिन् यातास्तदपि सुदृशां किंकरत्वं युवानः ॥ ४७ ॥
त्वय्यासीने मनसिजगु(Fol. 6^b)रौ यत्र सारङ्गनेत्राः
संदृश्यन्ते रचितचतुरोद्यानदोलाविलासाः ।
अभ्यस्यन्त्यः सरभसमिव व्योमकान्तारयानं
कन्दर्पस्य त्रिदिवयुवतीं जेतुकामस्य सेनाः ॥ ४८ ॥
प्रासादानां दिनपरिणतौ(ग *)र्भदग्धागुरूणां
जालोद्गीर्णः (स *)जलजलदश्यामलो यत्र धूमः ।
सद्यः क्रीड़ा कुत(तु)करभसारूढ़पौरीमुखेन्दु-
ज्योत्स्नासङ्गप्रशमरतमः श्रेणिशङ्कां तनोति ॥ ४९ ॥
व्यर्थीभूतप्रियसहचरीचाटुवाचां निशीथे
रोषादस्वीकृतकुवलयोत्तंसविच्रंसि माल्यं ।
यूनां यत्र प्रणयकलहं केलिहर्म्याग्रभाजा-
मिन्दुः प्रत्यादिशति सविधीभूय शश्वत् करेण ॥ ५० ॥
तत्र स्वेच्छारतिविनिमये चैव सीमन्तिनीनां
कर्णोत्तंसि प्रकृतिसुभगं केतकीगर्भपत्रं ।
उत्पश्यन्ति व्यतिकरचलत्कुण्डलाघट्टनाभि- [५१ ॥
र्भिन्नं साक्षादिव मुखविधोः खण्डमेकं विद(Fol. 7^a)ग्धाः ॥
वाचः श्रोत्रामृतमनुगतभ्रूविलासाः कटाक्षा
रूपं हस्तोच्चयसमुदितं द(स्नि)ग्धमुग्धाश्च हाराः(वाः) ।
यातं लीलाञ्चितमकृतकं यत्र नेपथ्यमेतत्
पौरस्त्रीणां द्रविणसुलभा प्रक्रिया भूषणस्य ॥ ५२ ॥
पुञ्जीभूतं जगदिव ततः सप्तकक्षानिवेशै
रम्यं याया भवनमवनीमण्डलाखण्डलस्य ।
यत्सौधानां शिखि(ख)रिसुहृदां मूर्ध्नि विश्रान्तमेघे

विद्युल्लेखा वितरति मुहुर्वैजयन्तीविलासं ॥ ५३ ॥
स्निग्धश्यामैरिव विरचिता दारि(द्रावि ?)तैरिन्द्रनीलै-
र्व्यग्रापी तस्मिन्नवनिवनितारम्यरोमावलीव ।
यस्यास्तीरे विहरदनतिप्रौढसीमन्तिनीनां
मन्ये लीलागतिषु गुरवो राजहंसा भवन्ति ॥ ५४ ॥
देवं साक्षान्मनसिजमिव प्राप्तराज्याभिषेकं
सेवेथास्त्वं व्यथितसमये चामरग्राहिणीभिः ।
यस्य स्निग्धस्फुरदसिलतास्मा(धा)रगत्या जनानां
लब्धः संख्ये रिपुकुलवधूलोचने संविभागाः(गः) ॥ ५५ ॥
यस्यौत्सुक्यादसमसमरालोकनोन्म(न्मा)दभाजां
स्वर्गस्त्रीणामपरिगणितस्वस्तलोलाञ्चना(ला)नां ।
मन्ये राधाचतुरतुरगोत्खातरेणुप्रतानः
सद्यो लग्नः स्तनकलसयोरन्तरीयत्वमेति ॥ ५६ ॥
भुग्नग्रीवं भुजविल(स)स(ल)तासक्तवक्त्राम्बुजा (Fol. 7^{b}) भिः
सोऽयं सेवा(ना)न्वयन्टप इति त्रासकौतूहलाभ्यां ।
विष्वक् पीतः कुवलय(दल *)श्रेणिदीर्घैः कटाक्षैः
पौरस्त्रीभिः सपदि नगरीविद्रवे विद्विषां यः ॥ ५७ ॥
बद्धस्क(द्राक ?)न्दा विहगरुदितैर्विभ्रती चेतसीव
क्रीड़ागारे सुचिरलिखितामाकृतिं वल्लभस्य ।
प्रौढ़ारामायदरिनगरी सौधसंजातदुर्व्वा-
जालव्याजादलकपटलीं दूरनम्रां विभर्त्ति ॥ ५८ ॥
क्रीड़ारोषे सुतनुवचनाहन्यमानस्य पत्युः
प्रत्युद्गच्छत्पुलकपटलेनापि बाधां दधाना ।
भ्राम्यस्यद्रेर्व्वनभुवि कथं क्रूरदर्भाङ्कुराया-
मेवंप्राया यदरिनगरीद्वारिकाणां विलासः(पः) ॥ ५९ ॥
तस्मिन्काले क्वचिदपि स चेद्वासरस्य त्रिभागं
राजा प्राप्तो गमयति रहश्चिन्तयान्वा(यन्न ?)न्तरायान् ।

सन्देशो मे न पवन तदा किञ्चिदावेदनीयः
कार्य्यासक्ते मनसि लभते नावकाशं विलासः ॥ ६० ॥
आसाद्यातः कमपि समयं सौम्य वक्तुं विविक्ते
देवं नीचैर्विनयचतुरः कामिनां(नं) प्रक्रमेथाः ।
अप्यन्येषु प्रणयिभिरभिव्यञ्जितः कार्य्यभागः
सिद्धिं गन्तुं प्रभुरवसरे किं पुनः पार्थिवेषु ॥ ६१ ॥
श्रीखण्डाद्रे(Fol. 8^{a})र्व्वसति शिखरे कोऽपि गन्धर्व्वलोक-
स्तत्रास्त्येका कुवलयवती नाम मन्याङ्गनानां ।
दूतं तस्याः कलयो(य)(मलयो*)पत्यकामारुतं मां
कामिद्वन्द्वं घटयति मिथो विप्रयुक्तं य एकः ॥ ६२ ॥
जित्वा देव त्वयि सरभसं दाक्षिणात्यान् क्षितीशान्
प्रत्यावृत्ते मलयकटकाच्चित्तमादाय तस्याः ।
दूरं याते(न*) किमितरियावृत्तिरभ्येति तस्या
वाष्पोत्पीडा सपदि पदवीं संरुरोधेक्षणस्य ॥ ६३ ॥
विन्यस्याग्रं भुवि चरणयोः कौतुकोत्तम्भिताक्षी
त्वत्संपर्कप्रकृतिसुभगामुन्नतग्रीवमाशां ।
उत्पश्यन्ती किमपि सुतनुर्लक्ष्यते सौधशृङ्गा-
दुद्भिन्नाश्रुस्थगितमसकृत् त्वत्समीपं यियासुः ॥ ६४ ॥
यस्मिद(न्) काले नयनविषयं सा (धु ध *) (न्यो)सि नीतः
शारङ्गाक्ष्या सकल(ललना * ?)लोचना(न *)न्दकारिन् ।
जाने तस्मात् प्रभृत(ति ?)जनितस्वान्तसन्तापखेदा
सा रम्येषु क्वचिदपि न विश्वासमेकान्तमेति ॥ ६५ ॥
मुष्टिग्राह्यं किमपि विधिना कुर्व्वता मध्यभागं
मन्ये बाला कुसुमधनुषो निर्म्मिता कार्म्मुकाय ।
राजन्नुच्चैर्व्विरहजनितक्षामभारं(वं) वहन्ती
जाता संप्रत्यहह सुतनुः सा च मौर्व्वीलतेव ॥ ६६ ॥ (Fol. 8^{b})
कीदृक(क्) कान्तः कथय तरले वर्त्तते यस्तवान्त-

यत्नादित्थं सुभग वक्तृभिः पृष्ठयालीजनेन ।
निःश्वस्योच्चैः कथमपि तया स्तम्भिताश्रुप्रवाहा
न्यस्तादृष्टिर्लिखितमदने भित्तिभागे गृहस्य ॥ ६७ ॥
धत्ते सद्यस्त्वदुपगमितप्रेमलेखभ्रमं सा
तालीपत्रे प्रियसहचरीकर्णपाशच्युतेऽपि ।
किञ्च क्रीड़ाशुकमपि (मुहुः *) पृच्छति त्वत्प्रवृत्तिं
गाढ़ोद्भूतः क्व खलु गणयत्यन्वयं त्वर्थिभावः ॥ ६८ ॥
नोत्तं सत्त्वं दृशमपि नयत्युत्पले बद्धकोपा
माल्यैः क्लान्ता न भुजलतिकामप्यसौ संवृणोति ।
पद्मोद्विग्ना हृदयनिहितात्तापसंपत्तिहेतो-
रालोहस्तादपि च सहसा मि(मी)लिताक्षी विभा(भे)ति ॥६९॥
अभ्यस्यन्ती सरसकुसुमस्रस्तरोः प्रान्तसुप्ता
शुष्यत्पङ्कप्रकरसफरीसंभ्रमोद्वर्त्तितानि । [चा(द्वा)लयन्ती
धारावास्पं(ष्पै) न(नै)यनगलनी(लितैः)लालतां(कुन्तलं ?)
मन्ये बाला गमयति पुनः सा कथञ्चिद्दिनानि ॥ ७० ।
अन्तस्तापं तुहिनपयसामप्यनुच्छिद्यमाप्य
त्वत्तो बाला मलय(ज *)रजः श्रो(स्रो)तसामप्यसाध्यं ।
धत्ते निन्दां कुसुमविशिखे(*)त्यन्तसादृश्यमूढ़ा [॥ ७१ ॥
सुप्तापि स्यात् किमिह विरहव्या(Fol. 9^{a})कुला विभ्रमिन्यः
द्वेषः क्रीडाविपिनवसु(स)तौ चन्दनाम्भोनिषेधः
प्रत्याख्यानं सरसनलिनीतालवृन्तानिलस्य ।
जात त्तस्यां कथमपि सखी बुद्धिजस्त(स्व)द्वियोगे
मूर्च्छावेगव्ययगमविधेरेष एव प्रकारः ॥ ७२ ॥
धत्ते द्वेषं शशिनि कुरुते न ग्रहं केशहस्ते
दूरे हारं क्षिपति रमते निन्दया चन्दनस्य ।
वक्तुं देव त्वयि परमसौ मामा(म)वस्थां कथञ्चि-
द्गाढ़ोद्वेगा नयति कविता चिन्तया वासराणि ॥ ७३ ॥

आदौ याते नयनपदवीं स्तम्भयन(न्) पक्ष्ममालां
चुम्बन् गण्डस्थलभुवमथो पीतविम्बाधरोष्ठैः(ष्ठः) ।
कुर्व्वन् कण्ठहग्र(ग्रह)मपि कुचोत्सङ्गशय्याशयान-
स्तस्या वायुः किमिव न खलु त्वद्वियोगे करोति ॥ ७४ ॥
शारङ्गाक्ष्या जनयति न यद्भस्मसादङ्गकानि
त्वद्विश्लेषे स्मरहुतवहः श्वाससन्धुक्षितेऽपि ।
जाने तस्याः स खलु नयनद्रोणिवारां प्रभावो
यद्वा शश्वन्नृप तव मनोवर्त्तिनः शीतलस्य ॥ ७५ ॥
शान्तप्राये रजनिसमये किञ्चिदामीलिताक्षी
प्राप्य स्वप्रे(प्ने) कथमपि पुरस्त्वामतिप्रौढरागा ।
शि(श्लि)ष्यन्ती त्वां तनुमनुपदं विप्रबुद्धाथ वाला
लज्जालोलं वलयति दृशं सा सखीनां मुखेषु ॥ ७६ ॥
चन्द्राद्दस्या(न्या)मुपवनभुवं दूरतो द्वे(Fol. 9^{b})ष्टि वाला
नालापञ्च क्वचनकुरुते सार्द्धमालीजनेन ।
रक्षाहेतोः स्मरविशिखितः केवलं सा वराकी
धत्ते लीलाफलकमुरसि त्वत्प्रतिच्छन्दशोभिः (भि) ॥ ७७ ॥
विन्यश्य(स्य)न्ती शशिनि नयने दुर्द्दिनैरश्रुवारां
धाराश्वाः(स्वा)सैर्व्वकुलकुसुमामोदमाघ्रातुकामा ।
शुश्रुषुश्च भ्रमरविरुतं मूर्च्छया रक्षितासौ
वीक्ष्यावस्थां क इव करुणाकातरः स्यान्न तस्याः ॥ ७८ ॥
चेतोवृत्तिः स्फुरति करुणाविप्रयोगे विरागः
कोपावेशः कुसुमविशिखे नित्यमामेन्य(?)वद्धा ।
इत्थं स्वाङ्के स्थितमिव समालम्ब्य चित्रावराकी
त्वय्येकान्तस्थिरविरचितं भावमाविष्करोति ॥ ७९ ॥
प्रागालापाः प्रतिमुहुरपि प्रेमरम्याः सखीनां
त्वय्येकान्तव्यपगतदये सङ्गमाशापि नैव ।
तस्याश्चिन्तां(न्ता-) विरहजनितां(ता-) नाथ विस्फा(स्मा)रयन्ती-

मु(उ)च्चैरेका भवति सततं जीव(वि)तालम्बनाय ॥ ८० ॥

तस्या राजन्ननुभवमन(ना)साद्यहस्तावरोधा-
द्दूण्डाभोगे नयनसलिला(ल)स्रोतसा क्षालितेऽपि ।
प्रत्यासन्नः स्तनपरिसरे चेतसा त्वां वहन्त्याः
प्रालेयांशुर्नृपतिककुदच्छत्रभङ्गीं विभर्त्ति ॥ ८१ ॥

यातः क्षात्र(च्छ्रा)त्तुहिन समयः संप्रति त्वत्सकाशा-
दागच्छन्तीं स(प)वन (Fol. 10^{a})लहरीमप्यनासा(श्वा)दयन्त्याः।
कः सम्बन्धे(द्ध) परभृतबधूकेलिवाचाललोले
चैत्रे तस्याः कथय सुभग प्राणरक्षाभ्युपायः ॥ ८२ ॥

भूयोभूयः प्रविशति मनो दारुणे मन्मथाग्नौ
मग्नं वास्याम्भसि नयनयोर्व्वन्ध्यमिन्दीवराक्ष्याः ।
तस्या राजन्नतनुविरहव्याकुलायास्तपस्वी
जातो भस्मच्छुरित इव च क्षामपाण्डुः कपोलः ॥ ८३ ॥

राजा(ज)न्नुर्व्वीवलयवनिताकामुक त्वत्सकाशा-
दाशातन्तुर्भवतु सुदृशो दुर्ल्लभः प्रेमतन्तुः ।
कष्टात्कष्टं पुनरिदमहो स्वप्नसङ्केतदूती
निद्राप्यस्याः क्षणमपि न यन्नेत्रसीमानमेति ॥ ८४ ॥

प्रत्यावृत्ता स्तनपरिसराच्चन्दनस्फीतमूर्त्तेः
श्वासा एव स्मरकृतबहोद्दीपनैकप्रगल्भाः ।
तामुत्कण्ठाकुलितहृदयां खेदयन्ति प्रकामं
संप्राप्यन्ते मलयपवनैरेवमेवायशांसि ॥ ८५ ॥

त्वद्वक्त्रानुस्मरणरसिका कातरा च प्रकामं
ज्योत्स्नासेकैर्द्विजपतिमधिक्षेपमा(पा)त्रं करोति ।
किञ्च देष्टि त्रिदशभिषजौ सुन्दर त्वां विचिन्त्य
प्रायेणैवं भवति विधुरासन्नमृत्योर्म्मनीषा ॥ ८६ ॥

सा वैरस्यादसितनयना हैमतालीदधा(ला,नां
प्रत्याख्यानात् प्रकृतिसुभगं कर्म्म(केश ?)पाशं विभर्त्ति ।

तद्गात्रानां किमपि सहसा दुर्ब्बलत्वं (Fol. 10^b) विचिन्त्य
त्यक्तं त्रासाद्गुणमिव मनोजन्मना कार्म्मुकस्य ॥ ८७ ॥
अप्याजन्मप्रभृतिसुहृदश्चन्द(न *)स्यापराधा-
दध्यास्ते सा न खलु मलयोपत्यकाकाननानि ।
किञ्च द्वेषादुपरि मदनस्येव सर्व्वाङ्गतन्वी
बद्धावेशा मनसि रतये नावकाशं ददाति ॥ ८८ ॥
पीनोद्याने वित(च)रति भृशं यत्नसंरुध्य(द्ध)वाष्पा(स्पा)
सान्द्रे चन्द्रार्च्चिषि निविशते चन्दनाभ्यक्तगात्री ।
क्रीड़ावापीम(d)भि(d)मरुद(भि *)मुखं धावति व्याकुलासौ
किम्वा नार्य्यो रमणविरहे साहसं नाचरन्ति ॥ ८९ ॥
याता (* :) कण्ठस्थलमपि घनश्वासमात्रावशेषा-
स्तामुत्कण्ठाप्रतनुमसवः सर्व्वथा न त्यजन्ति ।
लब्ध्वा कण्ठप्रणयमथवा तादृशामङ्गनानां
शक्तस्त्यागे क इव भुवने चेतसा विच्युतोऽपि ॥ ९० ॥
क्षीणस्तापो वपुषि विगता नेत्रयोरश्रुधारा
विश्रान्तानि क्रमकृशतनोरङ्गविक्षेपणानि ।
इत्थं शान्ते विरहजनिते व्याधिरागे मृगाक्ष्याः
श्वासस्तस्याः परमुपचितो निवृतेरन्तरायः ॥ ९१ ॥
लीलोद्याने परभृतवधूपञ्चमैः पीड्यमाने
ताम्यन्मूर्त्तिर्म्मलयमरुता केलिवातायनेषु ।
सा नैकत्र क्वचिदपि पदं कातराक्षी विधत्ते
यत् सत्यं न त्रिभुवनमपि प्रीतये दुष्खि(दुःखि) तानां ॥ ९२ ॥
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प्रत्याख्यानात् सुभग सहसा विभ्यती नाभ्युपैति ।
राजानो हि प्रकृतिरसवच्चेतसोऽप्यन्यनारीं
रूढ़प्रेमप्रबलवनिताभीरवो नो लसन्ति ॥ ९३ ॥
तस्यास्तीव्रस्मरकृतभुजा दह्यमानाङ्गयष्टे-

न्यस्तं सद्यः स्तनपरिसरे चन्दनं शोषमेति ।
उच्चैः किम्वा वक्तृभिरपदारोपितस्वान्तवृत्ते-
स्त्वय्यायत्तः कुवलयदृशो जीवरक्षाप्रकारः ॥ ९४ ॥
इत्याख्याते पुलकिततनुर्म्मेदिनीपुष्पकेतुः
प्रत्युत्थाय प्रणयसुभगं गाढ़माश्लिष्यति त्वां ।
वाक्यैरेभिः कर(रु)णमसृणैः कोमलत्वं भजन्ते
ग्रावाणो(ऽ *)पि प्रकृतिसरसः किं पुनस्तादृशो यः ॥ ९५ ।
सद्यः कृत्वा पवन विनयादञ्जलिं मूर्द्ध्नि किञ्चि-
द्वक्तव्योऽसौ रहसि भवता मद्गिरा गौड़राजः ।
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व्यक्तं देव त्वमसि जगतामीश्वरः शार्ङ्गपाणिः ।
तन्मां भक्तिप्रवणमनसं नाणुगृह्णासि कस्मात्
कायव्यूहं रचयितुमलं नापरः कैटभारेः ॥ ९७ ॥
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न्मामासाद्य त्वमयमकृथा गोचरे यन्न वाचां । [स्यां
तत्कुर्व्वीथाः सुभग न सतां (Fol. 11^b) गर्हशी(णी)या यथा
कन्यालोके (कं ?) न खलु सुधियो भूषयित्वा त्यजन्ति ॥ ९८ ॥
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हृष्टस्येव त्रिपुरजयिना पुष्पकेतु(तो)र्नवस्य ।
राजन्नस्तु प्रणयचतुरो दूरतः प्रेमवन्धः
पुण्येन स्यां तव चरणयोः केन संवाहनेऽपि ॥ ९९ ॥
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नापन्नानां न खलु वहुशः काकुवादान् सहन्ते ॥ १०० ॥

दन्तिव्यूहं कनकलतिकां चामरं हैमदण्डं
यो गौड़ेन्द्रादलभत कविक्ष्माभृतां चक्रवर्त्ती ।
श्रीधोयीकः सकलरसिकप्रीतिहेतोर्म्मनस्वी
काव्यं सारस्वतमिव (सतन् *) मन्त्रमेतज्जगाद ॥ १०१ ॥

गोष्ठीबन्धः सकलकविभिर्व्वाचि वैदर्भरीति-
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यावज्जैत्रं कलयति धनुः कौतुकं पुष्पकेतुः ।
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(Fol. 12^a)

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वाक्संदर्भाः कतिचिदमृतस्यन्दिनो निर्म्मिताश्च ।
तीरे संप्रत्यमरसरितः क्वापि शैवोपकण्ठे
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इति श्रीधोयीकविराजविरचितं पवनदूताख्यं समाप्तं ॥ * ॥

श्रीश्रीसीतारामाभ्यां नमो नमः । श्रीरामः । श्रीहरिः ॥ ० ॥

श्रीश्रीराधाकृष्णाभ्यां नमो नमः ॥ ० ॥

जगत्सृष्टौ यस्य श्रमविरह एव प्रलयतो(ऽ *)पि
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6. *The* Hydra *of the Calcutta Tanks*—By NELSON ANNANDALE, B.A., *Deputy Superintendent of the Indian Museum.*

Description.—Body and tentacles very elongate, the latter not clubbed; body cylindrical throughout; six (sometimes five) tentacles in well-grown, five in young, individuals; ovaries one or two, testes numerous. Testes and ovaries do not occur together on the same individual. *Coloration.*—Tentacles and base milky white; distal portion of the body either pale or dark olive-green, deep chestnut, orange-brown, pale brown, cream-colour or dirty white; never bright green.

When I exhibited specimens of the Calcutta Polyp to the Society I was inclined to regard it at most as a variety of *Hydra viridis*, using the specific name in a more extended sense than its author Linnæus adopted, to include *H. fusca.* A careful study of the descriptions of the European forms and an examination of a larger number of Indian specimens has since led me to doubt whether I was correct; in coming to a decision I am indebted to a note received from my friend Dr. J. H. Ashworth, of the University of Edinburgh, who has not, however, seen the Indian form. On the whole this form appears to be related to Pallas' *H. vulgaris;* but the question of specific characters, in animals so simple and so variable in appearance from moment to moment, is a very difficult one. From typical specimens of *H. vulgaris*[1] it differs in several important details.

When the animal is clinging to an inclined or vertical surface the expanded tentacles are arched, their proximal portion projecting in a straight line from the disk, while the distal extremity either falls downwards or extends upwards. Every phase of colour may be found in the same tank, but the darker specimen are more common over deeper water. Specimens kept in a bright light fade so as to become of an almost pure and uniform white, whatever their original coloration may have been.

The Polyp is usually found on the under surface of the floating leaves of water-plants. It is by no means uncommon but may be a little hard to find. Sexual reproduction takes place at any rate from December to March, but probably ceases at the commencement of the hot weather.[1] Budding occurs simultaneously. I have not seen more than two buds on one adult at the same time, and one is commoner; nor have I seen an attached bud budding. The food consists chiefly of small Crustacea and worms. Large Daphniids on coming in contact with the nematocysts are temporarily paralysed but break loose through their own weight and recover movement after a few minutes. Adult Polyps show little inclination to leave a situation in which they have settled, and buds rarely move far from their parents; consequently, large numbers of individuals may often be found within a small radius in the tanks, though there may be none on the surrounding plants. In an aquarium they desert the water-plants and take up a position on the side of the glass farthest from the light. If starved they become extremely pale and attenuated within a day or two, their colour disappearing very much more rapidly than it does when they are well fed but kept in a bright light. They do not seem to be able to endure a change of temperature such as that brought about by the sun shining directly on the surface of the water in a large glass jar.

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[1] I have just seen Downing's recently published summary of what is known regarding the species of *Hydra*, in his paper on "The Spermatogenesis of *Hydra*. (*Zool. Jahrb.*, *Anat.*, 1905.) He recognizes, on what appear to be sufficient grounds, the following four, with one variety of the first:—(1) *H. viridis*, Linn.; (2) *H. grisea*, Linn. (with *H. vulgaris*, Pall., as a synonym); (3) *H. fusca*, Linn.; and (4) *H. diœcia*, Downing. If sexual characters are to be taken into account, as has been done in constituting *H. diœcia*—and the only objection is that a specimen which it is desirable to identify may not be breeding—then the Indian *Hydra* should be regarded as a distinct species, though it may only be protandrous or the converse. Under the circumstances it will be convenient to give it, at any rate provisionally, specific rank, calling it *H. orientalis*. The description above is a sufficient diagnosis. June 6th, 1905.

So far as I am aware, the genus *Hydra* has not previously been recorded from British India, but a species (*H. fusca ?*)[2] is reported from Tonkin. The late Professor J. Wood-Mason, as Major Alcock informs me, collected many specimens in Calcutta. I have myself seen a species (probably the same as the Calcutta one) in an aquarium in the Experimental Gardens at Penang.

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[1] Since the beginning of the hot weather my captive specimens have disappeared, and I have not been able to find any free in the tanks. April 12th 1905. This remark still holds good July 21st, 1905.

[2] Richard, *Mem. Soc. zool. France*, vii, p. 237. What may be the same species is recorded from Turkestan (Daday, *Zool. Jahrb. Syst.*, 1904. p. 480).

* * *

7. *The Composition of the oil from Bir Bahoti or the "Rains Insect,"* (Trombidium grandissimum).—By E. G. Hill, B.A., F.C.S.

The animal known to natives as *bir bahoti* and which is described as the "rains insect," the "red velvet insect," the "lady cow," in the Cyclopædia of India, and as *Bucella carniola* in Platts' dictionary, is a red mite about half an inch long and from a quarter to three-eighths of an inch in its widest part. It is covered with a scarlet, velvety down, and appears on the ground at the beginning of the rainy season. It is only to be found for a few weeks in the year, but it has a great reputation among Mahomedans as an aphrodisiac, so it is collected and kept for sale in the bazaar. The insects from which the author extracted the oil for his experiments were purchased from a dealer in Allahabad city. They had been kept for several months, but had not putrified at all. On pressure they exuded a deep red oil. It is this oil which is used medically as an external application. The Cyclopædia quoted above states that the oil is used as a counter-irritant, but it appears to have no such properties, and its efficacy as a medicine is probably purely imaginary and due to its colour.

About a pound of the insects were extracted with ether in a Soxhlet's apparatus. The extraction was carried on till the ether came over colourless, and the various fractions were then mixed together and the ether evaporated. The oil was slightly wet and it was dried over a little calcium chloride. Thus obtained it was almost as deep in colour as bromine. It had a specific gravity of ·907 at 15°C. On being kept at that temperature for a day or two, it set to a semi-solid mass which melted at 18°-19°. The oil had a very peculiar odour somewhat resembling that of Malwa oil of opium. It began to boil with decomposition at 240°. The first portions of the distillate were liquid, but subsequently at a higher temperature solid products also passed over. These were all colourless. Acrolein was obviously one of the products.

With strong sulphuric acid the oil gave a vivid blue colour which turned to green. With nitric acid all colour was destroyed. Cold potassium hydrate, chlorine water, hydrochloric acid and ferric chloride had no action on the oil.

The oil readily dissolved in ether, but alcohol left a small portion undissolved. This was of the same red colour as the original oil: it was more soluble in hot alcohol, but was thrown out of solution as the alcohol cooled.

With nitrous acid the oil gave a buttery elaïdin in a few hours.

On distillation in steam partial hydrolysis took place, and the distillate had a pungent odour which seemed to be that of butyric acid. This acid was recognized by neutralizing the distillate with potassium hydrate and evaporating to dryness on the water bath. The salt thus obtained was treated with alcohol and a few drops of sulphuric acid, and warmed, when the distinctive odour of ethyl butyrate was obtained. The distillate with steam also contained a small quantity of a solid acid.

The following values were obtained for the oil by the usual methods. It determining the saponification value aniline blue was used as an indicator and gave fairly good results, the very deep colour of the oil making very accurate observations extremely difficult :—

Sp. Gr. at 15° ...	... ·906–907	Mean of three determinations.
Acid value ...	... 62·3	
Saponification value	... 194·7	
Ester value ...	... 132·4	
Unsaponifiable ...	... 3·7 per cent.	
Reichert-Meissl value	... 0·55	
Hehner value	... 94	
Iodine value	... 65	

The unsaponifiable matter above was extracted with ethyl ether from a solution of the soda soap. It contained a good deal of colouring matter.

Preliminary examination.—As a preliminary examination part of the extracted oil was saponified with potassium hydrate and the fatty acids liberated. These were then fractionally precipitated with an alcoholic solution of magnesium acetate. The various fractions were decomposed with hydrochloric acid, and the melting points of the free acids thus obtained were all between 48° and 66°. The above indicated the probable presence of a mixture of the glycerides of the more commonly occurring fatty acids, but recrystallization of the six fractions of the free acids obtained from the magnesium soap gave a comparatively large amount of an acid melting at about 52°, which seemed to indicate the possibility that there was a large amount of myristic acid in the oil.

Unsaponifiable matter.—A quantity of the oil was carefully saponified with alcoholic potash, and the soap dried on clean sand. This was then extracted with ethyl ether in a Soxhlet apparatus. The extract contained soap, so it was dried on sand and extracted a second time. The insoluble portion was added to the soap left from the first extraction. The ether extract seemed to contain some unsaponified oil, so it was saponified a second time and again extracted with ether. On evaporation of the extract the solid product was apparently free from soap or oil. This was fractionally crystallized from alcohol in two fractions which had melting points of 106° and 95°. These fractions were separately acetylized by boiling with acetic anhydride under an inverted condenser, and the acetates precipitated by pouring into boiling water. The acetaes were carefully washed and crystallized from alcohol when their melting points were 98° and 68° respectively. The acetates were decomposed with potassium hydrate and the alcohols taken up in ether. The extracts were evaporated to dryness and crystallized from alcohol and had melting points of 110° and 104° respectively.

Neither of the products thus obtained crystallized in the characteristic manner of cholesterol. The crystals were thin plates, but their shape was quite irregular. Tested for cholesterol by the colour reactions the results were as follows:—

A solution of a very small quantity in acetic anhydride gave an intense blue colour on the addition of strong sulphuric acid drop by drop, and the same result was obtained by Burchard's modification of the above test in which the cholesterol is first dissolved in 2 c.c. of chloroform, and then treated with 20 drops of acetic anhydride and one drop of sulphuric acid. Salkowski's modification of Hager's reaction gave the colour which is characteristic of cholesterol. A minute quantity was dissolved in 2 c.c. of chloroform and an equal volume of concentrated sulphuric added to it and the mixture shaken. On separating, the chloroformic layer was coloured red, and on standing changed to purple on the following day when the lower layer had a decided green fluoresence. It should be stated that the unsaponifiable matter used in the above tests was quite free from colour.

These reactions and the melting point of the alcohols obtained indicate the presence of cholesterol, and possibly of a fatty alcohol of high molecular weight. The amount of unsaponifiable matter available was too small for further investigation.

The Fatty acids.—The soap freed from unsaponifiable matter was treated with dilute hydrochloric acid, and heated to liberate the fatty acids. These were thoroughly washed and dried in a steam-oven. They were still tinted red, but not enough so to render impossible the use of phenol-phthalein as an indicator.

For the mixed fatty acids the following values were obtained:—

Saponification value	199
(Hence mean mol. wt.	282)
Iodine value	66·6
Melting point	31°–32°

It is stated by Lewkowitsch that when the mixed fatty acids are triturated with alcohol specific gravity ·911, the unsaturated acids are almost completely dissolved. Accordingly the mixed acids obtained as above were treated in that way in the cold and filtered. The filtrate was reserved for treatment by Varrentrap's method. The residue of saturated acids was washed with alcohol sp. gr. ·911 and fractionally crystallized from absolute alcohol. Three fractions were thus obtained, and each of these was recrystallized three times from hot alcohol. The melting points were then 54°, 53°, and 53°. 5. After a fourth crystallization the melting points were 54°. 7, 53°. 4 and 53°. 6, respectively. They were thus very nearly pure, but not quite, and the presence of myristic acid with a small quantity of palmitic or stearic acids was indicated. The three fractions were mixed and put on one side.

The filtrate from the alcohol sp. gr. ·911 were evaporated down to dryness and saponified with an alcoholic solution of potassium hydrate. The soap was exactly neutralized with acetic acid and poured in a thin stream into a boiling solution of lead acetate (7 per cent.) with constant agitation. The operation was conducted in a flask according to Tortelli and Ruggeri's modification of Varrentrap's method. The solution was cooled and the supernatant liquid poured off and the lead salt washed with lukewarm water and then dried with filter paper. The lead salts in the flask were then warmed with ether on the water bath, and shaken, until they had completely disintegrated. The flask was kept at a temperature of 10° for 24 hours, and then the liquid was filtered. The filtrate was decomposed with dilute hydrochloric acid, washed, and the ether evaporated off in a stream of dry carbonic acid. The unsaturated acids obtained in this way gave an iodine value of 84. They were almost colourless, having a faint yellow tint, and remained liquid at the temperature of the laboratory, which was about 17° Centigrade. Compared with the acids left after trituration with alcohol ·911, the amount was not large.

The lead salts, insoluble in ether, were also decomposed with hydrochloric acid and washed and dried. The acids were then added to the mixed fractions from trituration with alcohol mentioned above. This mixture then contained all the saturated fatty acids.

These mixed saturated acids were then treated according to a suggestion of Partheil and Feriè. The solubilites in alcohol of the lithium salts of oleic lauric, myristic, palmitic and stearic acids differ sufficiently for it to be theoretically possible to separate them. In the following, Partheil and Ferie's directions were followed, but the alcohol used was the "absolute alcohol" of the laboratory and was subsequently found to have a sp. gr. of ·809.

The acids (8 grams) were saponified with 120 c. c. of half normal alcoholic potash, and the soap dissolved in 800 c.c. of 50 per cent. alcohol. A ten per cent. solution of lithium acetate in 50 per cent. alcohol was added, and the mixture warmed on the water bath to 60°. Nearly the whole of the precipitate formed at first passed into solution, and on cooling, a quantity of minute crystals separated out. These were filtered off, washed with 50 per cent. alcohol, and the filtrate which should have contained lithium oleate, together with the lithium salts of the less saturated acids, was put on one side.

The lithium salts precipitated on cooling the solution in 50 per cent. alcohol were dissolved in hot absolute alcohol A large amount was required, but the whole of the precipitate was brought into solution. The solution was then allowed to stand in the cold for 24 hours, at the end of which time there had settled down a precipitate which should have been the lithium salts of palmitic and stearic acids. There was only a small quantity of this precipitate, but it was filtered off, the free acid liberated in the usual manner, well washed and crystallized from alcohol. The acid thus obtained had a melting point of 54°.5 to 55°, and was probably a mixture of stearic and myristic acids in equal proportions. According to Reintz such a mixture melts at 54°.5, and as will be shown later there were clear indications of the presence of stearic acid in the oil.

The filtrate from the solution in absolute alcohol should have contained only lithium myristate. The alcohol was evaporated off and the salt decomposed with hydrochloric acid and washed. It melted at 53°.7, and after recrystallization at 53°.8. Myristic acid melts at 53°.8.

Combustion of ·1077 gram gave—

H_2O ·1162 gram, *i.e.*, 11·98 per cent. hydrogen.
CO_2 ·2777 gram, *i.e.*, 70·3 per cent carbon.

Myristic acid, $C_{14}H_{28}O_2$, gives 11·8 per cent. hydrogen and 70·5 per cent. carbon.

This acid was obviously pure myristic acid.

The filtrate from the solution in 50 per cent. alcohol was evaporated down and decomposed with hydrochloric acid. The free acids thus obtained were liquid at the temperature of the laboratory, showing that all the liquid acids had not been removed by the trituration with alcohol sp. gr. 911. The amount was too small for further examination.

In the above work there is uncertainty as to the presence of stearic acid, and owing to the method adopted for the separation of the fatty acids it appeared desirable to make a separation *ab initio* by means of the lead salts and redetermine the iodine value for the unsaturated acids. Accordingly a fresh lot of the mixed fatty acids was saponified. The soap was converted into the lead salts and these treated according to the method of Tortelli and Ruggeri. The solid and liquid acids were thus separated. The liquid acids on standing for a few days at 18° had deposited a few small needle-like crystals which melted or dissolved in the liquid acid on slightly warming it. These are mentioned below.

The solid fatty acids were converted into their lithium salts as before, and the 50 per cent. alcoholic solution was heated to 60°, cooled and filtered. The filtrate gave liquid acids on hydrolysis. These were added to the liquid acids obtained from the lead salts. The salts on the filter were digested with absolute alcohol and filtered hot in a hot water funnel. This step was rendered necessary by the fact that the dissolved myristic acid began to crystallize out as soon as the temperature fell more than a few degrees. The precipitate left after filtering the hot solution gave on hydrolysis a small quantity of acids which was dissolved in boiling alcohol. The crystals were pressed in filter paper. This was repeated four times, and after each crystallization the melting point of the crystals was taken. These were 49°.5, 51°.5, 53°.5, 62°.6. The remaining acid was fractionally crystallized in two fractions, and the melting point of each fraction was found to be 64°.5. Since this is above the melting point of pure palmitic acid it may be taken as certain that stearic acid in small quantity is present in the oil.

The filtrate from the hot alcohol solution was cooled. There was a copious deposit of lithium myristate. This was filtered off and the freed acids were crystallized in three fractions which had melting points of 53°·7, 53°·8 and 53°·8 respectively. The acid was thus pure myristic acid. The filtrate from this lithium myristate was evaporated down and the acid liberated in the usual manner. It was myristic acid with the melting point 53°.4, and after crystallizing from alcohol, 53°·7. The unsaturated fatty acids obtained in the second series of operations had deposited a few white crystals after standing for two days at a temperature of 20°. As it was possible that they might still contain a small amount of solid acids they were again converted into the lead salts and treated with ether as above described. The acid thus prepared again deposited crystals in two days at 18°, but the iodine value was 94°.5, so it was probable that the solid acid was an unsaturated acid.

For the investigation of this solid acid the crystals were filtered off, and freed as far as possible from all liquid acids by gently pressing them between filter paper. The acid was distinctly solid and was quite white. The amount was only 0·1390 gram which had the iodine value of 67. The iodine value of the liquid filtered off was again taken to see whether it had undergone any alteration. It was found to be 67 when taken at the same time as that of the crystals, and when taken four days later after exposure to air was found to be less still. Since the original value was 95, it seems likely that the unsaturated acids consisted mainly of oleic acid, and possibly of a lower acid of the same series. The change in the iodine value would be due to oxidation or decomposition. These changes seem similar to those experienced by Senkowski (*Zeit. f. Physiolog. Chem.* 1898, 434).

The acids isolated were present as glycerides as is shown by the saponification value of the oil. Glycerol was, however, isolated in the usual way by saponifying the oil, removing the fatty acids and neutralizing the remaining solution. This was then evaporated to dryness and extracted with alcohol. The extract after removal of the alcohol was a rather dark liquid readily miscible with water. It gave all the reactions of glycerol.

Conclusion.—The above experiments point to the conclusion that the oil is principally composed of myristodiolein, and that there are also present small quantities of stearin, cholesterol and colouring matter. The butyric acid may be the result of decomposition. There is possibly also present an alcohol of high molecular weight belonging to the fatty series of carbon compounds.

In the above it will be seen that the author's results regarding the separation of stearic and myristic acid do not agree with those of Partheil and Feriè. The latter state that when a mixture of stearate, palmitate and myristate of lithium are heated with absolute alcohol so as to dissolve the salts, only the stearate and palmitate separate out on cooling, while the myristate remains in solution. Lewkowitsch, indeed, suggests a method of separation of the acids based on their work, but he qualifies his remarks by the statement that Partheil and Feriè worked on such small quantities that their results need confirmation. What is probably the case is that owing to the greater solubility of the lithium salt such a separation is possible when the amount of myristic acid is not in very large proportion to the stearic and palmitic acids, but that when it is large the method needs modification. The author proposes to investigate this question.

8. CONTRIBUTIONS TO ORIENTAL HERPETOLOGY II.—*Notes on the Oriental Lizards in the Indian Museum, with a List of the Species recorded from British India and Ceylon.* Part I.—*By* NELSON ANNANDALE, B.A., *Deputy Superintendent of the Indian Museum.* (With 2 plates.)

The collection of lizards in the Indian Museum is mainly Indian and Burmese, including examples of the great majority of the indigenous species; but interesting material from neighbouring countries, specially Persia, Eastern Turkestan, Yunnan, Siam and Malaya, is also included. Of forms from more distant regions only a comparatively small number are represented, one of the most noteworthy being the rare and peculiar Australian Ball-tailed Gecko, *Nephrurus asper*,[1] of which a good specimen was obtained in exchange with the Queensland Museum some years ago, under a wrong identification. The Skinks and Lacertidæ of Palestine, however, are well represented by the collection of the late Dr. J. Anderson. Regarding the majority of our Oriental specimens, an examination adds little to the systematic and geographical knowledge to be found in Mr. Boulenger's works. Of a few, however, this is not the case; for there are still parts of India—the country between northern Assam and southern Tenasserim is one of them—of which even the systematist has not yet exhausted the vertebrate zoology, and from which the Museum possesses specimens not examined critically until within the last few months.

In the light chiefly of Mr. Boulenger's volume in the "Fauna of India" and subsequent papers, it is no longer possible to maintain many of the older Indian naturalists' identifications, whether published or in manuscript, and he has recently pointed out that the names of two of the commonest of our Indian lizards cannot stand —that *Hemidactylus coctæi*, D. & B., the common house-lizard of Calcutta, must be known as *H. flaviviridis*, Rüpp, while *H. gleadovii*, Murray (which is even more abundant in some parts of India) is identical with *H. brookii*, Gray. I must express my personal obligations to Mr. Boulenger for examining certain Geckos about the correct identifications of which I was doubtful, notably the specimens on which the form *Gymnodactylus consobrinoides* is founded.

GECKONIDÆ.

ALSOPHYLAX PIPIENS (Pall.)

Gymnodactylus microtis, Blanford, *J.A.S.B.* XLIV (2), 1875, p. 193; and *2nd. Yark. Miss., Rept.*, p. 15, pl. ii, fig. 1.
Alsophylax pipiens, *Boulenger, Cat. Liz. Brit. Mus.* i, p. 19.

Dr. Blanford does not record this species from Ladak, though it appears to be common in Eastern Turkestan; but there is a specimen in the Museum (from Stoliczka's Yarkand collection), which bears a label corresponding to the locality "Kharbu, Ladak" in the register. By some error this individual is entered as *Gymnodactylus stoliczkæ*—a species so distinct from *A. pipiens* that it is hardly probable that any confusion can have been made between them. It is possible, however, that some accidental exchange of labels may have taken place, and the latter species must be recorded as belonging doubtfully to the fauna of British India. It is desirable, if it does occur in Ladak, that further specimens should be obtained. They are easily recognizable on account of the extremely small size of the ear-opening.

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[1] Its locality is given as Queensland.

Distribution.—Turkestan; Transcaspia.

GYMNODACTYLUS OLDHAMI, Theob.

G. oldhami, *Theobald, Cat. Rept. Brit. Ind.*, p. 81. *Boulenger, Faun. Ind., Rept.*, p. 38.

The Indian Museum possesses the type and three other specimens of this Gecko. Except the type, they are from Lower Burma ("Tavoy," "Mintao," and "Tenasserim Expedition"); while the type is recorded as from S. Canara. This locality is more than doubtful. It was merely suggested to Theobald (*loc. cit.*) by Beddome, who did not take the species himself in South India.

Boulenger's "keys" in the "Fauna of India" and the "Catalogue" hold good for *G. oldhami*, *G. fasciolatus* and *G. variegatus*, the types of all of which are in the Indian Museum but have lately been examined by him.

GYMNODACTYLUS MARMORATUS, Gray.

G. marmoratus, *Boulenger, Cat. Liz. Brit. Mus.* i, p. 44.

The Museum has lately received specimens of this species from the Malay Peninsula in exchange with the Selangor State Museum. It is to be hoped that it will be sought for in Lower Burma.

GYMNODACTYLUS CONSOBRINOIDES, nov.

The description is based on two male specimens, both probably immature, obtained in Tavoy a number of years ago by one of the Museum collectors.

Diagnosis.—A form closely allied to *G. pulchellus* and the Bornean species *G. consobrinus.* There is no trace of a præanal groove; probably the adult male has an almost straight series of præanal and femoral pores, uninterrupted in the middle line and numbering about 26; in the young male these are represented by depressions in a row of enlarged scales. The dorsal tubercles are smaller than in *G. pulchellus* and less distinctly keeled; the ventrals are larger; the ventral region is not marked off by a line of enlarged tubercles; the

PLATE I.

1c x 4
1d x 4
1 x 2
2 x 4

Photogravure Survey of India Offices, Calcutta, May 1905

1 PHYLLODACTYLUS BURMANICUS. 2 PHYLLODACTYLUS SIAMENSIS.

C. Chowdhary, del.

Photogravure Survey of India Offices Calcutta May 1906

1. HEMIDACTYLUS SUBTRIEDROIDES. 2. HEMIDACTYLUS TRIEDRUS [illegible]
3. GONATODES ANDERSONII. 4. JAPALURA ANDERSONIANA.

plates on the ventral surface of the tail are not separated from the scales of the sides, as they are in *G. pulchellus*, by heterogeneously shaped, slightly enlarged scales. The head is very slightly depressed in the frontal region. In the types the colours have faded; the dorsal surface is dirty grey-brown, with nine darker cross-bars, edged with dirty white, on the body, and ten or eleven on the tail; on the body they are considerably narrower than the interspaces, but on the tail they become gradually broader from before backwards; the enlarged dorsal tubercles are pale; the lower surface is dirty pale brown.

Measurements (Immature male).

Total length	112	m.m.
Body	36	„
Tail	62	„
Head	14	„
Breadth of head	9	„
Fore-limb	15	„
Hind limb	24	„

I have not been able to compare the specimens with examples of *G. consobrinus*; but Mr. Boulenger regards them as representing a species intermediate in some respects between *G. pulchellus* and *G. consobrinus*. On the whole, the points in which they differ from the former seem to tend rather in the direction of the latter's characteristic peculiarities.

GONATODES ANDERSONII, Annand. (Plate II, fig. 3).

G. andersonii, *Annandale, J.A.S.B.* (2) suppl., 1904, p. 21.

Since the description of this form was written two additional specimens, both from Narcondam, have been presented to the Museum by Mr. C. G. Rogers. They agree well with the types and differ in the same respects as they do from *G. kandianus* and *G gracilis*. On the whole they show that the Andaman (or Narcondam?) form is undergoing what is probably a parallel evolution to that which has produced *G. gracilis*.

PHYLLODACTYLUS BURMANICUS, Annand. (Plate, I, fig. 1).

P. burmanicus, *Annandale, Ann. Mag. N. H.* (7) XV, 1905, p. 28.

Since I described this species another specimen, from the same locality and collection, has been found in the Museum. It is also a male. The proportions of the head differ somewhat from those of the type, so that these cannot any longer be considered as specific characters. The number of lamellæ under the fourth toe is smaller than in *P. siamensis*, being 8 or 9 in the specimens examined (see figs. 1b, 2*a*, Pl. I).

The possession by the males of this species and of *P. siamensis*, Blgr., of præanal pores marks the two forms off as constituting a very distinct section of the genus *Phyllodactylus*, if not a separate genus. I take this opportunity to figure certain structural details, as *P. europæus* is the only other species of which I have examined specimens. *P. siamensis* and *P. burmanicus* are the only forms known from the Indian Region.

HEMIDACTYLUS TRIEDRUS (Daud.) (Plate II, fig. 2).

H. subtriedrus, *Stoliczka, J.A.S.B.*, XLI (2), 1872, p. 93.

H. triedrus, *Boulenger, Cat. Liz.* i, p. 133, and *Faun. Ind., Rept.*, p. 89. Annandale, *Ann. Mag. N. H.* (7) XV, p. 30.

There is a fair series of this Gecko in the Indian Museum, but unfortunately most of the specimens are without localities. One labelled "near Ellore" and named, apparently by Stoliczka, *Hemidactylus subtriedrus*, agrees closely with Jerdon's description of that species, which, however, is not definitive. It agrees with Boulenger's definition of *H. subtriedrus* in having ten labials, a head more depressed than that of typical specimens of *H. triedrus* and rather smaller ventral scales; but it differs in having only seven infradigital lamellæ under the thumb, nine under the middle finger, and nine under the middle toe. It may, therefore, be regarded as intermediate between the two forms. The fact that it is from the Ellore district suggests the possibility that other specimens of an intermediate character occur and that *H. subtriedrus* is not specifically distinct. Possibly it is one of the two specimens referred to by Stoliczka in the reference quoted; but it is not the one figured. Its donor's name was originally omitted in the Museum register, but "Dr. Stoliczka" has been written in in pencil at a later date.

HEMIDACTYLUS KARENORUM (Theob.)

A specimen from Cachar, Assam (*Wood-Mason*). Previously known from Pegu.

LEPIDODACTYLUS CEYLONENSIS, Blgr.

Specimens from "Hills between Burma and Siam" and from Tavoy (Museum collector).

LIST OF GECKOS FROM SINKIP ISLAND.

The following species were taken on Sinkip Island, which lies some little distance off the east coast of Sumatra, by the late Prof. J. Wood-Mason's collector:—

1. *Gymnodactylus feæ*, Blgr. (3 specimens).
2. *Hemidactylus frenatus*, Gray (numerous specimens).
3. *Hemidactylus platyurus* (Schneid.) (numerous specimens).

EUBLEPHARIDÆ.

Eublepharis hardwickii, Gray

I find it hard to ascertain the exact range of this somewhat rare species. The Museum has specimens from the following localities:—Quetta; Khorda, Orissa; Ganjam; the Sunderbans, near Calcutta. Very few of the Indian lizards are found both in Baluchistan and Lower Bengal.

AGAMIDÆ.

Pyctolæmus gularis, Ptrs.

A male from Goalpara, Assam (*H. L. Houghton*).

The male differs from the female only in the development of the gular pouch, which commences in a vertical line with the centre of the eye and terminates behind at the anterior border of the shoulder girdle. It can be folded into the surface of the throat so as to be very inconspicuous, but is evidently capable of great distention; the three pairs of gular folds which characterize the female are well marked on its sides. Its general colour is black, but these folds and the lower border are dirty white: the specimen, however, is much faded.

Acanthosaura lamnidentata, Blgr.

A lamnidentata, *Boulenger, Faun. Ind. Rept.*, p. 126; and *Ann. Mus. Geneva* (2) xiii, p. 317.

Coloration is no guide in the identification of this species. Specimens of *A. lamnidentata*, *A. armata* and *A. crucigera*, may all be coloured[1] (at any rate if faded) exactly alike, as the series in the Museum shows. This series bears out Boulenger's contention, that the relative length of the superciliary spine affords a constant distinction between *A. lamnidentata* and *A. crucigera*, though the two forms are otherwise practically identical. In *A. armata* the spine is considerably longer than in either.

The Museum possesses characteristic specimens of *A. armata* from "Burma" (*Major Berdmore*) and from Mergui (*Anderson*). The latter is the one recorded in the *Fauna of Mergui*, i, p. 343.

Japalura andersoniana, nov. (Plate II, fig. 4).

This species is founded on two male specimens collected by Col. Godwin-Austen in the Duffla Hills (Assam-Bhutan Frontier). The late Dr. J. Anderson recognised it as new, but neither gave it a name nor described it.

Diagnosis.—Body rather slender, strongly compressed; hind-limb long, reaching to the tip of the snout or beyond. Snout slightly longer than the diameter of the orbit, obtuse; rostral and superciliary ridge prominent, continuous; the latter succeeded behind, after an interval, by a large conical tubercle, round which several others of smaller size are grouped. There are two other prominent tubercles between the top of the head and the tympanic region on each side. A curved line of smaller tubercles outlines the inner margin of the superciliary region and a flat or slightly depressed sub-circular area is similarly marked off on the snout. All the scales are keeled; those on the sides are small, with five oblique rows of larger and more prominent scales running downwards and forwards from the base of the dorsal crest to or beyond a longitudinal line of similar scales; between every two of these rows there is another, which is much shorter and does not reach as much as half way down the body. The dorsal surface of the limbs is covered with rather large heterogeneous scales, the larger of which show a tendency to be arranged in V-shaped series; the scales on the belly and ventral surface of the limbs are larger than those on the sides; the tail is covered with small, imbricate, leaf-shaped scales, which are not enlarged below. The nuchal crest is well developed (in the male), consisting of a fold of skin covered with three or four parallel horizontal rows of flat, smooth scales, the uppermost of which are larger than those below them and form a feebly serrated ridge; the dorsal crest is much lower, consisting of a single row of similar scales. There is no gular pouch and no distinct gular fold.

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[1] But compare my note in *Fascic. Malay.—Zool.* 1, p. 154.

Coloration—Dorsal surface dirty brown, rather dark, brighter on the head, feebly marbled on the sides, pale on the ventral surface; pale, dark-edged lines radiating from the eyes.

Measurements ♂.

Total length (tip of tail injured)		...	119	mm.
Head	...	... ...	20	„
Width of head		... ...	11	„
Body	...	... ...	33	„
Fore-limb	...	... ...	29	„
Hind limb	...	... ...	52	„

This species can be distinguished easily from *J. planidorsata* by its compressed body and long hind limbs.

SALEA HORSFIELDII, Gray

Specimens from Moulmein (*Stoliczka*) and from "Hills near Harmatti, Duffla Expedition" (*Godwin-Austen*).

CALOTES MICROLEPIS, Blgr.

Of this species, previously known from the hills of northern Tenasserim, the Museum possesses a specimen from Manipur (*R. D. Oldham.*)

CALOTES VERSICOLOR (Daud).

C. gigas, *Blyth, J.A.S.B.* XII, 1853, p. 648.

C. gigas (*under* C. mystaceus), *Boulenger, Faun. Ind., Rept.* p. 138. C. versicolor *id., op. cit.*, p. 135.

I have examined several hundred specimens of this common lizard. They came from nearly all parts of India and Ceylon, from Malaya and Pitsanuloke in Siam. With these I have compared Blyth's types of *C. gigas* (which are in the Indian Museum), with the result that I find the two forms to belong clearly to the same species. There is no oblique fold in front of the shoulder in Blyth's specimens, and therefore they cannot be associated with *C. mystaceus*, as Boulenger, who had had no opportunity of examining them, thought probable.

The types of *C. gigas*, which are adult males, differ from the majority of specimens only in having the secondary sexual characters more fully developed; the scales (especially those on the throat) are heavily keeled and inclined to be lanceolate in outline, the crest is very high, the cheeks are greatly swollen, the size above the average. The large series examined shows that in Lower Bengal (and probably in Assam, Burma and Malaya), the males of *C. versicolor* rarely if ever reach an extreme degree of development in these respects; but no exact line can be drawn. We have specimens from Sind, from South and North-West India and from Ceylon which agree almost exactly with Blyth's, while a much larger number are intermediate in character. Dr. Blanford's examples from Baluchistan (*Eastern Persia* ii, p. 313) belong to this intermediate phase; but specimens from Calcutta have the male characters even less marked. The extreme phase (*gigas*) probably bears much the same relation to *versicolor* as *Gonyocephalus humii* (Blyth) does to *G. subcristatus* (Stol).

CALOTES YUNNANENSIS, nov.

C. maria (*part.*), *Anderson, Anat. Zool. Res. Yunnan Ex.*, p 806.

Among the lizards collected by Dr. Anderson in Yunnan I find a *Calotes* which does not agree with any published description. It is registered in the Museum books as *C. maria* and is the only specimen from Yunnan now in the collection which at all resembles this species. It differs, however, in certain respects from the descriptions and from specimens from Assam, and I think that (in the present state of systematic nomenclature) it is worthy of a specific name. Anderson states that the specimens of *C. maria* which he took in Yunnan were compared with the types of the species; but what has become of the rest of them I have been unable to discover. As regards several important points the new form is intermediate between *C. maria* and *C. jerdonii*; but it has a distinct though rather short and shallow oblique fold in front of the shoulder covered with granular scales. Were it not that the presence or absence of such a fold is a very constant character in other members of the genus, the specimen would practically break down the distinction between the two species, or would have to be regarded as an aberrant example of *C. maria.*

Diagnosis.—Upper head scales moderate, smooth, imbricate, slightly enlarged on the superciliary area; two parallel rows of enlarged, erect scales on the temple, the posterior few of each series ending in short spines; the lower series is separated from the tympanum (in the type) by three rows of small scales. Tympanum nearly half the diameter of the orbit. Gular pouch not developed; gular scales strongly keeled, larger than ventrals, equalling dorsals. A rather short and shallow oblique fold in front of shoulder; dorso-nuchal crest well developed anteriorly, the longest spines (just behind the head) measuring between half and two-thirds the diameter of the orbit. Fifty-six scales round the centre of the body; dorsal and lateral scales feebly keeled, directed upwards and backwards; ventrals much smaller than dorsals, strongly keeled. The adpressed hind limb reaches the anterior border of the orbit; third and fourth fingers nearly equal. Tail round, slender, very long. Colour green (faded in the type), with pale (red ?) markings on the sides and on the knees and elbows.

Measurements ♂.

Total Length	... ...	405 Mm.
Head ...	... ...	34 ,,
Width of head	... ...	17 ,,
Body ...	... ...	65 ,,
Tail ...	... ...	305 ,,
Fore-limb ...	... ...	53 ,,
Hind limb ...	... ...	68 ,,

CALOTES ROUXII, D & B.

C. rouxii, *Boulenger, Faun. Ind., Rept.*, p. 142.

Several specimens from Travancore (*Beddome*).

AGAMA MEGALONYX (Gthr.)

A. megalonyx, *Boulenger, Cat. Liz.*; i. p. 347.

Two specimens from the Perso-Baluch frontier (*Dr. Turnbull* and *Col. Wahab*).

AGAMA LIRATA (Blanf.)

A. lirata, *Boulenger, Faun. Ind., Rept.*, p. 150.

Four specimens from Sind (*Murray ?*) agree very closely with the type, which is in the Indian Museum. Probably this species does not reach the full dimensions of *A. melanura*; its tail is more slender and proportionately longer.

AGAMA. sp.

There are two specimens of a large *Agama* in the collection which represent a species allied in some respects to *A. nupta*, De Fil. As their origin is uncertain I prefer to leave them unnamed. The numbers on their museum labels have been originally entered in the register without particulars, but "Dr. W. T. Blanford. Persian collection ?" has been written in at a later date in pencil and the collector's labels attached to them resemble those of the Persian Collection.

They differ from specimens of *A. nupta* (of which I have examined a large series) chiefly in the character of their dorsal lepidosis. There is along the vertebral line a narrow band of enlarged scales which widens slightly from before backwards. These scales are not homogeneous or arranged in any order, but differ largely *inter se* both in size and in development; they are strongly mucronate and their bases do not overlap; some of them have almost the character of retroverted spines. Similar scales are scattered on the sides of the posterior part of the body, and there are others, which have a rather larger base, on the postero-lateral surface of the thighs. The majority of the dorso-lateral scales are extremely minute, but the antero-lateral scales of the thighs are large, imbricating, leaf-shaped, homogeneous and strongly keeled. The other characters are those of *A. nupta*.

AGAMA NUPTA, De Fil.

A. nupta, *Boulenger, Faun. Ind. Rept.*, p. 151. *Alcock* and *Finn, J.A.S.B.* lxv (2), 1896, p. 555.

The verticillation of the tail, at any rate in old specimens, may be practically absent. The coloration is frequently an almost uniform brownish-black. The Museum processes a characteristic but imperfect specimen from Chitral (*Dr. G. M. Giles*)

LIOLEPIS BELLII (Gray)

L. bellii, Boulenger, Fascic. Malay. Zool. 1, p. 155. *Annandale* and *Robinson*, *ibid.* (note). *Annandale*, *P. Z. S.*, 1900, p. 857, and *Ann: Mag. N. H.* (7) XV, 1905, p. 32.

We have several immature specimens from Burma which exhibit the characteristic "juvenile livery" so well marked in examples from the Malay Peninsula.

LIST OF AGAMIDÆ TAKEN ON SINKIP ISLAND BY WOOD-MASON'S COLLECTOR.

1. *Draco quinquefasciatus* (Gray) (numerous specimens).
2. *Aphaniotis fusca* (Ptrs.) (one specimen).
3. *Calotes jubatus* (D. & B.) (one specimen).

ANGUIDÆ.

OPHISAURUS APUS (Pall.)

The known range of this species is from Dalmatia to Afghanistan, from near the Indian border of which we have a specimen; but it probably occurs also in adjacent parts of India. There are several specimens in the Indian Museum which have come from the Alipore Zoological Gardens, unfortunately without any definite history; but the probability is that they are from North-Western India.

OPHISAURUS GRACILIS (Gray)

Of *O. gracilis* the Museum possesses a large series, which exhibits great variation as regards colour. Judging from a collection recently made by Major Alcock, this species is common near Darjeeling. Major Alcock tells me that it is extremely sluggish and generally " shams dead " when handled.

VARANIDÆ.

VARANUS DUMERILII (Müll.)

The only specimen we possess is immature, being the type of Blanford's *Varanus macrolepis.* It is very desirable that further examples should be obtained, as the other Indian species of the family are represented by large series.

LIZARDS OF INDIA, BURMA AND CEYLON.[1]

GECKONIDÆ.

1.	Teratoscincus scincus* (Schleg.)	(Alcock and Finn, *J.A S.B.*, 1896.) Baluchistan.
2.	Ceramodactylus affinis, Murray*	(*iid, ibid.*) Baluchistan.
3.	Stenodactylus orientalis, § Blanf.	Sind.
4.	*Stenodactylus lumsdenii*, Blgr.	Baluchistan.
5.	Alsophylax pipiens * (Pall.) ?	Ladak ? (*Antea.*)
6.	,, tuberculatus, § (Blanf.)	Sind, Baluchistan.
7.	Gymnodactylus fedtschenkoi, Strauch.	Panjab Salt Range.
8.	Gymnodactylus scaber (Rüpp).	Sind.
9.	,, brevipes, § Blanf.	Baluchistan.
10.	,, kachensis, § Stol.	Katch ; Baluchistan ; Sind.
11.	,, stoliczkæ, Steind.	Upper Indus Valley.
12.	,, lawderanus, § Stol.	Almorah and Kumaun.
13.	,, nebulosus, Bedd.	S. India and Ceylon.
14.	*Gymnodactylus jeyporensis*, Bedd	Jeypore.
15.	,, *deccanensis*, Gthr.	Bombay Presidency.

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[1] A * denotes an addition to the Indian fauna since 1890 ; a § that a type or co-type is in the Indian Museum. The names of species not represented in this collection are printed in italics.

16.	*Gymnodactylus albofasciatus*, Blgr.	S. Canara.
17.	Gymnodactylus oldhami, § Theob.	Lower Burma.
18.	,, triedrus, Gthr.	Ceylon.
19.	,, frenatus, Gthr.	,,
20.	,, khasiensis § Jerd.	Assam; Upper Burma.
21.	,, rubidus, § (Blyth.)	Andamans.
22.	*Gymnodactylus peguensis*,* Blgr.	(Boulenger, *Ann. Mus. Genova* (2) xiii.) Pegu.
23.	Gymnodactylus pulchellus (Gray).	Bengal (?); and Lower Burma.
24.	,, consobrinoides,*§ Annand.	Tavoy. (*Antea.*)
25.	,, variegatus § (Blyth).	Lower Burma.
26.	,, feæ, * Blgr.	(Boulenger, *op. cit.*), Pegu.
27.	,, fasciolatus§ (Blyth.)	Western Himalayas.
28.	Agamura cruralis, § Blanf.	Baluchistan.
29.	,, persica * (A. Dum.)	(Alcock and Finn, *op. cit.*) Baluchistan.
30.	Pristurus rupestris. § Blanf.	Sind; Central India (?)
31.	Gonatodes indicus (Gray)	Nilgiris, S. India.
32.	,, wynadensis (Bedd.)	Wynaad ,, ,,
33.	*Gonatodes sisparensis* (Theob.)	Nilgiris ,, ,,
34.	Gonatodes ornatus (Bedd.)	Malabar.
35.	,, marmoratus (Bedd.)	Malabar District.
36.	,, mysoriensis (Jerd.)	Mysore.
37.	,, kandianus (Kelaart.)	Ceylon; S. India, and Preparis I.
38.	,, andersonii, * § Annand.	(Annandale, *J.A.S.B*, (2) suppl. 1904) Andamans.
39.	,, gracilis (Bedd.)	Ceylon and S. India.
40.	,, jerdonii (Theob.)	,, ,, ,,
41.	,, littoralis (Jerd.)	Malabar District.
42.	Phyllodactylus burmanicus,*§ Annand.	(Annandale, *Ann. Mag. N.H.*, 1905), Tavoy.
43.	Callodactylus aureus, Bedd.	N. Arcot.
44.	Ptyodactylus homolepis, § Blanf.	Sind and Baluchistan.
45.	Hemidactylus reticulatus, Bedd.	S. India.
46.	,, gracilis, § Blanf.	Central Provinces.
47.	,, frenatus, D. & B.	S. and E. India; Burma; Ceylon.
48.	,, brookii, Gray.	(=H. gleadovii, Murray.) All India and Ceylon.
49.	,, turcicus (Linn.)	Sind.
50.	,, persicus, § Anders.	,,
51.	,, maculatus, D. & B.	Deccan and S. India.
52.	,, triedrus (Daud.)	Central and S. India; Ceylon.
53.	*Hemidactylus substriedrus*, Jerd.	S. India.
54.	Hemidactylus subtriedroides,*§ Annand.	(Annandale, *op. cit.*), Upper Burma.
55.	,, depressus, Gray.	Ceylon.
56.	,, leschenaultii, D. & B.	All India, Burma (?) and Ceylon.
57.	,, flaviviridis, Rüpp.	(=H. coctæi, D. & B.), All India.
58.	,, giganteus, § Stol.	Malabar district.
59.	,, bowringii (Gray)	E. India and Burma.
60.	,, karenorum (Theob.)	Pegu; Cachar.
61.	,, garnotii, D. & B.	Sikhim and Burma.
62.	,, platyurus (Schneid.)	E. India; Burma and Ceylon.
63.	Teratolepis fasciata,§ Blyth.	Deccan and Sind.
64.	Gehyra mutilata (Wiegm.)	N.E. India; Burma and Ceylon.
65.	Lepidodactylus ceylonensis, Blgr.	Burma and Ceylon.
66.	,, aurantiacus (Bedd.)	S. India.
67.	,, lugubris (D. & B.)	Burma and Ceylon; Andamans and Nicobars.

68.	*Hoplodactylus duvaucelii* (D. & B.)	Bengal (?)
69.	Hoplodactylus anamallensis (Gthr.)	Anamallays, S. India.
70.	Gecko verticillatus, Laur.	N.E. India; Burma.
71.	,, stentor (Cant.)	Chittagong, Burma; Andamans and Nicobars.
72.	,, monarchus (D. & B.)	Ceylon.
73.	Ptychozoon homalocephalum (Crev.)	Lower Burma; Andamans (?) and Nicobars.
74.	Phelsuma andamanense § (Blyth.)	Andamans.

EUBLEPHARIDÆ.

75.	Eublepharis hardwickii, (Gray.)	Peninsular India; Baluchistan.
76.	,, macularius, § Blyth.	Punjab and Sind; Chitral.

AGAMIDÆ.

77.	Draco maculatus (Gray.)	Assam and Burma.
78.	,, blanfordii, Blgr.	Tenasserim.
79.	,, norvillii, *§ Alc.	(Alcock, (2) *J.A.S.B.* LXIV.) Upper Assam.
80.	,, dussumieri, D. & B.	Malabar Coast.
81.	,, tæniopterus, Gthr.	Tenasserim.
82.	Sitana ponticeriana, Cuv.	India and Ceylon (not in Himalayas).
83.	Otocryptis bivittata, Wiegm.	Ceylon.
84.	*Otocryptis beddomii*, Blgr.	S. India.
85.	Ptyctolæmus gularis, Ptrs.	Assam.
86.	Cophotis ceylanica, Ptrs.	Ceylon.
87.	Ceratophorus stoddartii, Gray.	Ceylon (mountains only.)
88.	,, tennentii, Gthr.	Ceylon.
89.	,, aspera, Gthr.	Ceylon.
90.	Lyriocephalus scutatus (Linn.)	Kandy district, Ceylon.
91.	Gonyocephalus subcristatus (Blyth.)	Andamans and Nicobars.
	[G. humii (Stol.) = G. subcristatus (aged individuals), Annandale, *J.A.S.B.* (2), 1904, suppl.]	
92.	*Gonyocephalus bellii* (D. & B.)	Bengal.
93.	,, *grandis* (Gray.)	Pegu.
94.	Acanthosaura armta (Gray)	Burma.
95.	,, crucigera, Blgr.	Tenasserim.
96.	,, lamnidentata, Blgr.	Lower Burma.
97.	*Acanthosaura minor* (Gray.)	Sikhim and Assam.
98.	,, *kakhiensis* (Anders.)	(= Calotes feæ, Blgr.) Burma.
99.	Acanthosaura major (Jerd.)	W. Himalayas.
100.	,, tricarinata § (Blyth.)	Sikhim.
101.	Japalura andersoniana, *§ Annand.	(*Antea*), N.E. Assam.
102.	,, variegata, Gray	Sikhim, Assam and Bengal.
103.	,, planidorsata, Jerd.	Assam; Sikhim.
104.	Salea horsfieldii, Gray	S. India; Ceylon (?); Burma; N. E. Assam.
105.	,, anamallayana (Bedd.)	Animalay and Patni Hills, S. India
106.	Calotes microlepis, Blgr.	Lower Burma; Manipur.
107.	,, cristatellus (Kuhl.)	Tenasserim.
108.	,, jubatus (D. & B.)	Nicobars.
109.	,, versicolor (Daud.)	All India, Burma and Ceylon.
	[C. gigas, Blyth = C. versicolor (Daud.)]	
110.	Calotes maria, Gray	Assam.
111.	,, jerdonii, Gthr.	,,
112.	,, emma, Gray	Burma and Assam.

113.	Calotes mystaceus, D. & B.	S. India, Ceylon, Andamans and Nicobars.
114.	*Calotes grandisquamis*, Gthr.	Malabar.
115.	Calotes nemoricola, Jerd.	Nilgiris; Malabar.
116.	*Calotes ceylonensis* (F. Müller)	Ceylon.
117.	Calotes liolepis, Blgr.	,,
118.	*Calotes andamanensis*,* Blgr.	(Boulenger, *Ann. Mag. N.H.*, 1891) Andamans.
119.	Calotes ophiomachus (Merr.)	Ceylon; S. India; Nicobars.
120.	,, nigrilabis, Ptrs.	Ceylon.
121.	*Calotes liocephalus*, Gthr.	,,
122.	Calotes rouxii, D. & B.	Bombay Presidency; Travancore.
123.	,, elliotii, Gthr.	S. India.
	[Calotes feæ, Blgr. = Acanthosaura kakhiensis (Anders.)]	
124.	Charasia dorsalis (Gray)	S. India (hills).
125.	,, blanfordiana, Stol.	Central India.
126.	,, ornata (Blyth)	Central and North-Eastern India.
127.	Agama isolepis, Blgr.	N.W. India.
128.	,, rubrigularis § (Blanf.)	Sind.
129.	,, megalonyx * (Gthr.)	Baluchistan (*Antea*).
130.	,, tuberculata, Gray	Kashmir and W. Himalayas.
131.	,, dayana (Stol.)	Foot of W. Himalayas.
132.	,, himalayana (Steind.)	Upper Indus Valley.
133.	,, agrorensis § (Stol.)	N. W. India (high altitudes).
134.	,, melanura (Blyth)	Sind; Panjab; W. Himalayas.
135.	,, lirata§ (Blanf.)	Sind; Baluchistan.
136.	,, nupta, De Fil.	,, ,, ; Chitral.
137.	,, caucasica (Eichw.)	Baluchistan.
138.	Phrynocephalus olivierii., D. & B.	Baluchistan.
139.	,, theobaldi, Blyth	Upper Indus Valley.
140.	,, caudivolvulus (Pall.)	Ladak.
141.	,, ornatus, Blgr.	N. Baluchistan.
142.	,, maculatus, Anders.	,, ,,
143.	,, euptilopus, *§ Alc. & Finn	,, ,, [Alcock and Finn. *op. cit.*]
144.	,, luteoguttatus, Blgr.	,, ,,
145.	Liolepis bellii (Gray)	S. India; Burma.
146.	Uromastix hardwickii, Gray	N. W. India.
147.	,, asmussii* (Strauch)	Baluchistan [Alcock and Finn, *op. cit.*].

ANGUIDÆ.

148.	Ophisaurus gracilis (Gray)	N.E. India; Sikhim; Assam Upper Burma.
149.	,, apus * (Pall.) ?	N.W. India ? (*Antea.*)

VARANÆ.

150.	Varanus griseus (Daud.)	N.W. India (deserts).
151.	,, flavescens (Gray)	N. India; Burma.
152.	,, bengalensis (Daud.)	Peninsular India and Ceylon; Burma ?
153.	,, nebulosus (Gray)	Central Provinces (?); Bengal; Burma.
154.	,, dumerilii (Müll.)	Tenasserim.
155.	,, salvator (Laur.)	N. E. India; Ceylon; Burma Andamans and Nicobars.

(*To be continued.*)

9. *Archæologisch Onderzoek op Java en Madura. I Beschrijving van de ruïne bij de Tesa Toempang, genaamd Tjandi Djago. Batavia, 1904.—By* FATHER DAHLMANN, S.J. *Communicated by the Philological Secretary.*

A magnificent volume of Archæological research has lately been presented to the Asiatic Society by the Batavian Society of Letters and Arts. It is the first outcome of the researches conducted by the newly established archæological survey in the Dutch East Indies, and it treats of one of those highly interesting relics of true Indian Art, so profusely scattered over the whole ground of Middle and Eastern Java. Although I cannot claim any title to introduce to you this admirable work—yet the favourable opportunity I enjoyed of visiting Java on my way back from China and of personally examining some of its most distinguished monuments, may perhaps excuse my saying a few words about the results embodied in this volume. I am all the more anxious to do this for the Asiatic Society in that it was a distinguished English statesman and administrator in the Far East, who gave us the first accurate and scientific knowledge of the monumental antiquities of Hindoo civilization in Java. I refer to Sir Thomas Stamford Raffles, Governor General of Java and its dependencies. This distinguished member of the Asiatic Society, inspired by that high enthusiam for Indian research which led to so many discoveries, revealed to us for the first time a new world of Indian art in his masterly History of Java. I say "masterly:" for when we remember that until his time nothing had been done to clear the way for the study of the relics of Hindoo Religion and Art once predominant in Java, everyone must be surprised at the vast and minute learning with which Raffles introduced into the descriptive and figurative details of research. His History of Java gave the first impulse to closer investigation of the grand monuments. But although since his time some remarkable works have been published by distinguished members of the Batavian Society, it was long before a methodical inquiry, covering the whole ground of ancient Hindoo relics, could be inaugurated—perhaps according to a German proverb, "Gut Ding hat Weile," "a good thing needs time." And indeed it is a good thing, in fact an excellent thing, which finally has been brought forth by the Archæological Survey of the Dutch East Indies under the leadership of its talented Director General, Dr. Brandes.

The volume presents to us a complete archæological picture of a Buddhist Sanctuary in Eastern Java, now-a-days called Tjandi Toempong. The monument described is neither one of the earliest nor one of the finest works produced by the Hindoo artists in Java. For the monuments erected in the Eastern Kingdoms of Hindoo Princes show, in style and workmanship, a remarkable decline from what we admire in the artistic beauty developed at a much earlier period in Central Java. If we look for the monuments of the classical period, we must turn our eyes to Boro-Bodur and to Prambanam. We might have perhaps expected that the systematic research now inaugurated would begin with those masterpieces of art. The survey has taken a contrary course, beginning with Eastern Java, where art was in its decline and leading investigation from the latest relics of true Indian art to the earliest and at the same time the most glorious representatives of Indian workmanship.

I say "true Indian art." For when you go through the splendid photo-series illustrating this volume, you will immediately be impressed by the truly Indian character of the ornament. This is not only the case with the decorative ornament in general. The true Indian character shines forth above all in the sculpture cycles decorating the terraces of the monument. It was one of the characteristic features of the Hindoo artists in Java, that they decorated the walls not only with detached sculptures and statues, but with a continuous line of scenes representing a whole cycle of legends. They reached their highest perfection in the sculpture cycles of central Java. At the Brahmanical sanctuary of Prambanam the legend of the Ramáyana is worked out in a splendid set of reliefs. But in the Buddhist sanctuary of Boro Bodur we have the whole legend of the life of Buddha as told in the Lalitavistara, put before our eyes within the frame of more than sixty reliefs. Another series of sculptures represents in continuous line more than thirty Jatakas, that is to say, more than all the Buddhist monuments of India proper and of Afghanistan together contain. Besides there is another sculpture cycle of more than sixty highly-refined reliefs, of which the meaning has not yet been discovered. We meet with the same characteristic feature in the monument described in the present volume.

The Sanctuary is mounted on a threefold terrace, one terrace rising above the other. The walls of every terrace have their peculiar cycle of legends. In the first terrace we meet with a set of legends evidently taken from the fables of the Pancatantra : the reliefs of the second terrace represent scenes of the Rāma legend : those of the third terrace give the Arjunavivāha and especially Arjuna's fight with Çiva ; finally the walls of the Sanctuary itself are decorated with scenes of the Kṛishṇa legend. So we see here united within the architectural limits of a small sanctuary a good number of favourite topics of Hindoo epic poetry.

Now as regards artistic workmanship the sculpture-cycles of Tjandi Toempang are, as I have already pointed out, far inferior to those found in Central Java. For comparison's sake I have laid before you a few of my own photos, representing scenes of the sculpture cycles either of Boro-Bodur or of Prambanam. Nay, the artistic value of our Tjandi must be held even much inferior to the reliefs of Panataran, lying in the same region of Eastern Java.

But it is not the artistic value, which gives to the sculpture-cycles here represented their importance. This is to be sought for in quite another line of comparison.

The artists of the classical period of Hindoo art in Java closely followed the original Sanscrit texts when representing their legendary objects. The legends, as told either in the original Rāmāyana and Mahābhārata or in the original Lalitavistara, were the models put before the eyes of the workmen of Central Java. In Eastern Java, on the contrary, it is no longer Hindoo epic poetry as contained in the original epic, but Hindoo poetry remodelled in the old Javanese Kavi translation. The scenes of the first terrace, although closely resembling some legends of the Pancatantra, follow the old Javanese Tantra, which itself is based on the original Pancatantra or on the Hitopadeça. The cycle of the second terrace follows the Rāma legend as told in the old Javanese Rāmāyana. And so with the legend of Arjuna in the third terrace and with the Kṛishṇa legend on the walls of the Sanctuary. It is therefore as a Javanese reflex of Hindoo poetry, that is to say, as a typical old Javanese development of Hindoo thought and Hindoo life,—an outcome of that continuous Hindoo influence, spread over the country for so many centuries—that the monument before us should be viewed and a place assigned to it in the history of Indian art in Java. In these sculptures we must look therefore for the true representative of all those literary and artistic characteristics which Hindoo civilisation finally developed on Javanese ground and which, combined together, make out the proper and original type of old Javanese civilisation.

But there is yet another remarkable point to be noted in our monument; a point which is of considerable importance with regard to the religious and artistic development of Hindoo belief not only in Java but over the whole sphere of India.

Look at the decorative element of our sanctuary. You will find nothing in it indicative of a work of Buddhist devotion. The sculpture-cycles, in which Çiva plays such a remarkable part, might lead you to say that Tjandi Toempang is a monument of Çiva worship.

But this is not the case. Although the ornament is all Brahmanical and as regards the sculpture cycles rather Çivaite, the monument itself was consecrated to the worship of the five Dhyāni-Buddhas and of three Tārās or mystic powers. This becomes evidently manifest in the splendid statues representing separately the Dhyāni-Buddhas and their Tārās. And if there could be a doubt about the character of these statues, the old Nāgarī inscriptions, giving to every statue its proper signification would dispel it.

How is this fact, that is to say the close connexion of Çivaite art and Buddhistic worship, to be explained.

The foundation of the Sanctuary, according to an inscription found at Tjandi Toempong is to be assigned to the first half of the thirteenth century. Hindoo society in Eastern Java was at that time absolutely Çivaite; it had been Çivaite ever since the seventh and eight century and remained Çivaite in spite of the Buddhistic influence spreading over the country. Buddhism became in the ninth century so strong that it could give rise to monuments of such splendour as we see in Boro-Bodur and in its neigbourhood. It is as if a mighty wave of Buddhist influence had suddenly come over Hindoo civilisation, established in Java on a thoroughly Brahmanical ground, either Çivaite or Vishnuite. Later on this Buddhist wave lost its strength amidst Çivaite and Vishnuite worship, rooted deeper and spreading farther its branches amongst the Hindooised population.

But in the beginning of the thirteenth century a second wave of Buddhist influence reached Java on its eastern shore. This second wave came evidently from the south of India and gained some temporary ascendancy in the mighty kingdom of Madjapahit. That there must have been such an influence coming from the south, long ago, was pointed out by Burnell in his South-Indian Inscriptions. He found evidence of it in the close resemblance of the Nāgārī type of inscriptions we find in connexion with the statues to the Nāgārī type of South India. He was only wrong about the epoch, saying that according to the resemblance of types this influence must have been exerted in the eleventh century. The writing of the inscriptions closely resembles the Nāgārī character of the first half of the thirteenth century, which is quite in accordance with the age of the monument, as attested by the inscription of King Vishṇuvardhana. The monument described is therefore a new proof of the fact that Buddhism was yet existing in the south of India at the beginning of the thirteenth century, as in fact it existed in the north of India. But at the same time it is evident that Buddhism as developed in the Mahayāna, had entered into a close religious and artistic alliance with Çiva worship. With regard to this the Sanscrit inscription found in Kasia in the North-Western Provinces and recently interpreted by Prof. Kielhorn of Göttingen gives a striking parallel.

The inscription in the two first lines celebrates Çiva; in the third line Tārā, the Buddhaçakti is mentioned *disertis verbis.* In the fourth and fifth line Buddha is celebrated as Tathāgata and Munīndra. So we find in the north of India the same connexion of Çiva on the one side, of Buddha and its Çahti on the other side that we meet with in the eastern part of Java.

The few words I desired to say have become many. But they are, I hope, not quite out of place, since they tried to show how much light the religious and artistic development of Hindooism in Java may yet throw on the whole history of Indian religion and art. Further research may perhaps lead to the discovery of a page of the history of Indian art, lost in India proper and preserved in the Hindooised island far away.

10. *Anuruddha Thera—a learned Pāli author of Southern India in the 12th Century A.D.—By* PROF. SATIS CHANDRA VIDYĀBHŪṢAṆA, M.A.

With the rise of Buddhism the Pāli language rose to prominence in the 6th Century B.C. From that time to the close of the 1st Century B.C., that is, for nearly five hundred years, the Buddhist books including the well known Tripiṭakas, which were rehearsed in the three famous Buddhist councils, were used to be written principally in the Pāli language. But since the rise of the Mahāyāna school of Buddhism under the auspices of the fourth Buddhist Council that was held in Kāśmīra about the beginning of the Christian era, Sanskrit has been chosen as the principal medium of Buddhistic communications and the Buddhistic books have generally been written in the Sanskrit language.

Thousands of Indian books written in the Sanskrit language have recently been recovered from or traced in Nepal, Tibet, China, Japan, etc. But very few Indian books written in the Pāli language have been obtained from those places. Are we then to suppose that with the rise of the Mahāyāna school about the 1st Century A.D., the use of the Pāli language in the sacred scriptures was altogether stopped in India ? I daresay the answer is no, for, even in the 5th Century A.D., when the Mahāyāna school attained its highest development, India produced several eminent Pāli writers of whom Buddhaghoṣa[1] stands as the foremost. In the Ceylonese records[2] we find indications that even up to the year 1462 A.D. Ceylon used to derive some of its Pāli literature from India and Buddhist monks were in large numbers sent to Ceylon by the Southern Indian kings of the Choḷa and other dynasties. It is not within the scope of this paper to enumerate all the Pāli writers that flourished in India between the 1st Century A.D. and 15th Century A.D. In the present paper I shall give a brief account of only one of the many Pāli writers that adorned India during that long period. The name of this writer was Anuruddha Thera.

Anuruddha was the author of three works in the Pāli language, *viz.*, Abhidhammatthasaṁgaha, Paramatthavinicchaya and Nāma-rūpa-pariccheda. Besides, he was the author of a didactic Buddhistic poem in classical Sanskrit which is generally known under the name of Anuruddha-śataka.[3]

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[1] Vide Mahāvaṁsa, chapter XXXVII.

[2] Mahāvaṁsa, Rājāvali, Rājaratnākari, Saddharmālaṇkāra, commentary on the Visuddhimagga, etc.

[3] In the Saddhammasaṁgaha, chap. IX, verses 14, 15, London Pāli Text Society's edition (*Vide* J.P.T.S., 1890), two Pāli works of Anuruddha have

In the Saddhammasaṁgaha and Paramatthavinicchaya it is stated that Anuruddha was born in Kāñcipura on the Kāveri where he spent the early part of his life as a Buddhist priest. He gradually rose to the position of Saṅghanāyaka or High-priest. Subsequently he went to Tinnevelly and Tanjore and resided there for some time for the propagation of Buddhism. Afterwards he went over to Ceylon and was admitted into the priesthood of the Uttaramūla monastery. He is mentioned in the S'ataka as an *upasthavira*, but in the Saddhammasaṁgaha and other books he is described as a *thera*.

The Uttaramūla or Uttarola monastery[1] originated in Ceylon at the latter half of the 11th Century A.D. Anuruddha who belonged to that monastery[2] must therefore have lived after the 11th Century A.D.

In the Mahāvaṁsa[3] it is stated that Vijayabāhu I, who was King of Ceylon from 1065 A.D.—1120 A.D., sent messengers with gifts to the Rāmañña country unto his friend the King of

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been mentioned, *viz.*, Abhidhammatthasaṁgaha and Paramatthavinicchaya Thus we read there:—

अनुरुद्धेन थेरेन कञ्चिपुरवरे वरे ।
पकरणं कतं तेन परमत्थविनिच्छयम् ॥ १४ ॥
अनुरुद्धाभिधानेन थेरेन रचितम् इदम् ।
परमत्थप्पकासेतुम् अभिधम्मत्थसंगहं ॥ १५ ॥
(सद्धम्मसंगह, परिच्छेद ९) ।

Elsewhere we find the mention of two other works of Anuruddha, *viz.*, Nāmarūpapariccheda and S'ataka. The Abhidhammatthasaṁgaha has been published by the Pāli Text Society of London, and the S'ataka by the Buddhist Text Society of Calcutta.

[1] Mahāvaṁsa, chap. LVII, verse 20.

[2] ज्योत्स्ना हिमांशोरिव यन्मुखेन्दो-
र्निस्यन्दते सूक्तिरसौ सुधीरः ।
इदं व्यधत्तोत्तरमूलहार-
रत्नाङ्कुरोपस्थविरानुरुद्धः ॥ १०१ ॥ (अनुरुद्धशतक) ।

[3] Mahāvaṁsa, chap. LX, verse 5.

Anuruddha to bring from there some learned Buddhist monks and elders of the church. I have reasons to believe that the Rāmañña[1] country was identical with the kingdom of the Pallavas that lay in the Coromandel coast, and "the King of Anuruddha" was the Pallava King in whose territory Anuruddha was born and from whose territory learned monks including Anuruddha himself were taken over to Ceylon. Anuruddha must on this supposition have gone to Ceylon early in the 12th Century A.D. when Vijayabāhu I was King of the island.

Kāñcipura in which Anuruddha was born is identified with modern Conjeeveram, 43 miles south-west of Madras. It was the capital of the ancient kingdom of Drāviḍa and was the residence of the kings of the Pallava dynasty till that dynasty was overthrown by the Cholas at the close of the 11th Century A D. Rājarājendra Kulottuṅga Chola I, who reigned from 1064—1113 A.D., is said to have completely crushed the power of the Pallava kings and to have destroyed the city of Kāñci. He, however, subsequently rebuilt and greatly improved that city but selected Tanjore as the permanent place of residence of the Chola kings. Anuruddha, we have seen, lived both in Kāñci and Tanjore.

It may be noted here that the Pallava Kings who reigned in Kāñci were staunch Buddhists and belonged to the Sthavira school. It has already been stated that they were overthrown by the Cholas in the 11th Century A.D. From that time downwards they remained as vassals under the Chola kings. The last mention of the Pallavas as a dynasty occurs, as far as it is known at present, about the year 1223 A.D. In 1310 A.D. the Cholas being conquered by the Mahomedans Kāñci passed into the hands of the conquerors. Early in the 12th century A.D. Rāmānuja, the celebrated Vaiṣṇava preacher, flourished in Srīperumātur, 18 miles east-north-east of Kāñcipura, and converted the kings of the Chalukya, Chola and other dynasties into his religion. The Buddhists were henceforth persecuted by the Vaiṣṇavas of the Rāmānuja school as well as by the Mahomedan conquerors. Still Buddhism lingered for some time in Kāñcipura or Conjeeveram and finally disappeared from it at the close of the 15th Century A.D. Anuruddha Thera, who flourished in Kāñcipura early in the 12th Century A.D., was by no means the last Buddhist Pāli scholar of that city.

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[1] In Burmese books we find, however, that Anaurata or Anuruddha was the 42nd (or 44th) King of Pagan and Rāmañña or Ramagnia is the country round Thaton. *Vide* Bigandet's Legend of Gaudama, Vol. II, pp. 145-146 (3rd edition). Rev. T. Foulkes observes :—" Sir Emerson Tennent guesses that this Kingdom of Aramana [Rāmañña] may be a part of the Indo-Chinese Peninsula probably between Arracan and Siam ; and Turnour had already, without giving any authority, fixed it in Arracan ; but the passages in the *Rājaratnākari,* the *Rājāvali* and the *Mahāvaṁsa,* in which it is mentioned, clearly locate it on the Coromandel coast ; and, as it is not Pāndya nor Chola, the only part of that coast which remains is that which lies between Chola and Kalinga, namely, the old dominions of the Pallavas." The *Indian Antiquary,* Vol. XVII (1888), page 126.

11. *The Colouring Principle of the flowers of Nyctanthes Arbor-tristis.—By* E. G. Hill, B.A.

The *Nyctanthes Arbor-tristis*, known in Urdu as "Harsinghar," is a large shrub of the order Oleaceæ. The flowers are sessile in bracteate fascicles, they are pedunculate and are arranged in short terminal trichotomous cymes; the corolla tube is orange, and the limb white. The flowers open at night and fall to the ground the following day. They are then collected for use in dyeing. The plant grows most abundantly in the sub-Himalayan districts.

For use in dyeing, the flowers are steeped or boiled in water and the solution strained off. It is a beautiful rich golden-yellow, and dyes cotton fabrics without a mordant. The effect is transitory, the colour fading slowly. When used with alum or lime-juice the colour is brighter and less transitory, but the chief use of the dye is in combination with turmeric and safflower. It is seldom used with indigo. It is sometimes employed for colouring fancy leather-work. With safflower, turmeric, red ochre, myrobalans and sulphate of iron it gives a fast maroon-brown, and with *Butea frondosa* and indigo and acidulated water, a fast grape green.

No reference has been found to this flower in the chemical literature at my disposal, but in 1902, A. P. Sirkar made in my laboratory, a preliminary investigation into the colouring principle, which he considered existed in the flowers as a glucoside. He was unable to obtain this in a pure state, owing to its sparing solubility in most solvents, but he suggested $C_{15}H_{21}O_{5}$ for the colouring matter, although on boiling this with dilute hydrochloric acid, he obtained a substance with a brighter colour and a higher percentage of carbon. He also considered that there were two methoxy groups present in the compound and at least one carbonyl group.

The most noticeable feature of the colouring matter was the high percentage of hydrogen which was invariably obtained on combustion.

The method of work was as follows:—

Aqueous extract.—The flowers were extracted in cold water and the extract carefully filtered. The infusion was light-yellow in dilute, and dark-brown in concentrated solutions. It had a great attraction for flies. The infusion gave an acid reaction with litmus, and a yellow precipitate with basic lead acetate which became yellow on addition of ammonia. With copper sulphate it gave a pale-yellow precipitate, which became green with ammonia. Stannous chloride gave a turbidity which disappeared on adding acetic acid. Ferric chloride gave a greenish-black colour which darkened on adding ammonia. Fehling's solution was reduced, as were also gold chloride and ammoniacal silver nitrate. It gave no reaction with gelatin. When a few drops of the infusion were carefully added to a few cubic centimetres of concentrated sulphuric acid, an intense blue colour was produced at the junction of the two liquids. This soon darkened and disappeared.

When the infusion was allowed to stand for a few days alone, a reddish-brown deposit settled. If a little hydrochloric acid was added to the infusion, a reddish flocculent precipitate settled after about twelve hours. A similar precipitate was obtained by heating the infusion with basic lead acetate, decomposing the washed yellow precipitate with sulphuretted hydrogen, and warming the yellow solution obtained on filtering. The amount obtained was always very small, but attempts to get more from the solution by heating on the water-bath with dilute hydrochloric acid resulted in the deposition of a black amorphous substance. When dried, it was very light and friable, and varied in colour from a very dark-brown to a jet black. On evaporating the solution after removal of this black substance, it was found to contain a sweet substance, which reduced Fehling's solution on boiling.

About two grains of the red colouring matter were collected, and washed with water. On boiling with alcohol a large quantity dissolved, and the residue appeared to consist of mineral matter. The alcoholic solution on evaporation gave a dark-red lustrous deposit. This was entirely soluble in alcohol. Thus obtained, the substance melted between 250° and 260°, dissolved in alcohol, ethyl acetate, and ether, but it could be made to crystallize from none of these. It also dissolved readily in alkalis and alkaline carbonates, and in a solution of borax. It was sparingly soluble in chloroform and carbon bisulphide, insoluble in benzene and cold water, very slightly soluble in hot water, and soluble in acetic acid.

Alcoholic extract.—Owing to the apparent high solubility of the colouring matter in alcohol, some of the flowers were extracted in a Soxhlet apparatus with alcohol (sp. gr. ·810) till they were colourless, and the hot alcohol was then allowed to cool. On cooling, bunches of needle-like crystals had settled all over the flask. These were pale-yellow, but after several recrystallizations became white. They had a sweet taste, reduced a solution of ammoniacal silver nitrate, but did not rotate polarized light.

Analysis gave :—

Carbon = 39·62
Hydrogen. = 7·96

$$\left.\begin{array}{c}\text{Mannitol}\\ C_6H_{14}O_6\end{array}\right\}\text{ requires }\left\{\begin{array}{l}C = 39{\cdot}57\\ H = 7{\cdot}7\end{array}\right.$$

The crystals melted at 166°;
Mannitol melts at 168°.

When the filtrate from the mannitol was slightly evaporated and cooled, no further precipitation occurred, but a small quantity of wax separated. The residue contained crude colouring matter with some resinous products. To obtain the colouring principle, the alcoholic solution was heated with dilute hydrochloric acid, when a bright scarlet product was obtained. This was filtered off and washed with alcohol.

The yield was very small, but thus prepared, the colouring principle was only very slightly soluble in all solvents. If dissolved in large excess of alcohol and allowed to evaporate the colouring principle deposited a microscopic powder which seemed to be crystalline when viewed under an oil immersion ($\frac{1}{12}$).

Preparation of the colouring principle.—Since the above method was obviously not adapted to the preparation on a large scale, the colouring matter obtained by hydrolysis of the aqueous extract was dissolved as far as possible in alcohol and the solution heated with hydrochloric acid, when, as a rule, the bright red colouring principle was deposited. It was only possible to work with small quantities at a time, and in some cases black tarry products resulted at once with no red deposit at all. Moreover in some cases it appeared that the hydrolysis of the aqueous solution resulted at once in precipitation of most of the colouring principle, in which case the precipitate from the acidified water solution would not dissolve to any extent in alcohol, and the colouring principle could not be extracted by this method. The extraction was thus attended with great difficulty, and it was found that the best method was to keep solutions dilute, not to add too much acid, and not to boil The flocculent precipitate from the aqueous extract was then moderately soluble in alcohol, and on warming the alcoholic solution with hydrochloric acid a red precipitate settled down which could be easily filtered off. This red precipitate was washed with alcohol and water, and the purified product collected.

For a long time this could not be obtained pure, but it was eventually found to crystallize from pyridine and toluene. In the former of these it was very soluble, in the latter moderately so.

The crystals were apparently of two kinds—one yellow and one red, but on gently warming the yellow crystals they became red.

The melting point of the crystals was 225°—230°. They were tested for methoxy groups by Ziesel's method; none were present.

Two combustions of an incompletely purified sample (it yielded a trace of ash on combustion) gave:—

$$\begin{matrix} C=69{\cdot}10 \\ H=\ 7{\cdot}53 \end{matrix} \quad \text{and} \quad \begin{matrix} C=68{\cdot}91 \\ H=\ 7{\cdot}34 \end{matrix}$$

$$x\ (C_4H_5O) \qquad \text{requires} \left\{ \begin{matrix} C=69{\cdot}5 \\ H=\ 7{\cdot}2 \end{matrix} \right.$$

$$C_{19}H_{25}O_5 \qquad ,, \qquad \left\{ \begin{matrix} C=68{\cdot}4 \\ H=\ 7{\cdot}5 \end{matrix} \right.$$

Several other combustions of other samples had been made in the course of the work. Results varied from 68·60 to 70·36 for carbon, and 7·34 to 8·3 for hydrogen. The author thus does not attach importance to the formulæ mentioned above. It is certain, however, that Sirkar's results are useless.

Properties of the colouring matter.—The red crystals were practically insoluble in water, *very* slightly soluble in ether, benzene, alcohol, ligroin, moderately soluble in toluene, and readily in pyridine. With strong sulphuric acid they gave an intense blue compound which rapidly became yellow through apparent absorption of atmospheric moisture.

The author hopes to complete the investigation on some future occasion.

12. *The Monasteries of Tibet.**—*By Rai* SARAT CHANDRA DAS *Bahadur*, C.I.E.

INTRODUCTION.

Tibet is the land of monasteries. Her history chiefly comprises records of the establishment of monasteries and temples and their endowments by the State, chiefs and nobles of the country, commencing from the middle of the 7th Century A.D., to the 18th Century.

There are eighteen different Buddhist sects, out of which four are widely distributed all over higher Asia including Tibet, Mongolia and Western China. Of these four sects three, *viz.*, Sakya. Dûk-pa and Ñing-ma have the red-cap, which they use during religious services only, to distinguish them from the remaining 15 sects. The fourth which is the reformed sect and therefore the purest of all, has become dominant since the middle of the 17th Century. Its monks use the yellow-cap. The Dalai Lama is the head of this Church.

In the official register at Lhasa, in 1882, the total number of monasteries belonging to the Yellow-cap Church was 1026 with 491,242 monks. Out of this number, 281 monasteries belonged to the provinces of Ū and Tsang which constitute Tibet proper, 150 to the provinces of Nyang, Lhobrag and Kong-po; 27 to Upper Kham; 154 to Lower Kham and 414 to Ulterior Tibet which is called *Poi-Chen* or greater Tibet. In this list village-monasteries and *Māni-lhakhang* (prayer-wheel temples) have not been entered.

The number of monasteries belonging to the three red-cap sects, is a little more than the total of the Yellow-cap Church institutions. This would bring the total of the monasteries of all the 18 sects to over 2,500 and that of the monks to about 760,000.

In Tibet every third boy in a family, as a rule, is sent to the monastery, in consequence of which the male population of the country may be roughly estimated at 2½ to 3 millions.

The Yellow-cap Church Lamas take the vow of celebacy, which circumstances precludes them from keeping female company. But many among them while residing abroad seldom conform themselves to monastic discipline.

The miserable pittance which the monks of even the State-supported monasteries get for their subsistence, hardly exceeds three *Tanka*, *i e.*, 1½ Re. a month. Owing to this, about one-fifth of the monks in a monastery generally turn into traders. Many among them become mendicant priests and roam over the country in quest of the necessaries of life. These are called *Tāpā* or monastery-boys. The agricultural population often regard them with dread for their irregular habits of life and clamouring for alms.

There are few convents in Tibet and the number of nuns (*Tsûnmo*) in them is very small. While the largest monastery contains 10,000 monks, the largest convent can hardly count 100 nuns for its inmates. The nuns of Tibet have the reputation of being pure as only the most religiously disposed among the fair sex betake themselves to monastic life. The red-cap Lamas generally keep concubines called *Ani* who often dress as nuns.

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* Compiled from *Pagsam Jon zañ* and other Tibetan historical works.

Marriage being the exclusive privilege of the eldest brother in a landholder's family, the younger brothers seldom care to share the bed of the house-wife with him which the custom of the country allows. They generally keep concubines. It is true that there is marriage among the rich cultivators and herdsmen, but the majority of the common people make family in wedlock either singly or jointly. Thus, side by side with polyandry, concubinage has become a popular institution in Tibet. Out of 100, 99 people keep concubines. This explains the question as to what becomes of the majority of the female population who remain unmarried. The Tibetan male is generally less jealous than the Tibetan female which circumstance has given rise to the formation of that much despised relationship called *Nyamdo-pûn*, i.e., brotherhood in wedlock *versus* brotherhood in matrimony which is polyandry pure and simple.

RA-DENG.

རྭ་སྒྲེང་།

The monastery of Radeng was founded by Dom-ton-pa [1] in the year 1056 A.D. Many predictions were on record in some of the sacred books such as Mañjuçrī Mūla Tantra,[2] Phalpo-che, Do ñiñje Padma Karpo,[3] etc , as to the rise and progress of a great school and monastery in the centre of Tibet. Conformably to them, Dom-ton-pa founded Ra-deng in one of the finest spots of Ü,[4] rich in various kinds of alpine vegetation. The valley of Ra-deng is clad in thick forests of firs, cedars, cypresses, and junipers. It abounds in numerous brooks and fountains, which yield very good water. Nine mountains, the culminating cliffs of which have various slopes, form the back-ground of this famed old monastery. Many kinds of medicinal plants grow on these hills.

At this charming place which was possessed of many auspicious signs essential to the site of a sacred Buddhist institution, Dom-ton-pa built the monastery of Khyungo-chan, or "Eagle's head," in the vicinity of the hill of Senge-tag [5] (lion's rock). The valleys which open to the east and west of Ra-deng have spacious plateaus rich with verdure. On account of the tall and horn-like shape of the trees growing in this place, the monastery of

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[1] འབྲོམ་སྟོན་པ།

[2] འཇམ་དཔལ་ཙ་རྒྱུད།

[3] མདོ་སྙིང་རྗེ་དཀར་པོ།

[4] དབུས།

[5] སེང་གེ་བྲག།

Khyungo-chan[1] was called Ra-deng from (rwa, 'a horn,' and sgreng, 'standing erect.') The large silver tomb which contains Atiça's[2] remains is the most remarkable of all the sacred objects of Ra-deng. The central chapel of the monastery contains a complete set of the images of the *Tantrik* pantheon, in which Buddha is observing the triple vows, Maitreya watching the course of the world, and the four gods of medicine (Manlha)[3] looking to the four quarters as in life. Outside the cupola of the great *Chorten* was constructed the mansion of the chief *Tantrik* deity of *Guhya Samāja* (the mystic commune) with a number of mystical gods, all in relief. When the erection of the monastery with the images was completed, Dom-ton-pa is said to have propitiated the god of the *Tushita* heaven to enable him to have his monastery consecrated by his spiritual father. Accordingly, Atiça, who was then seated on the right of Maitreya, the coming Buddha, showered flowers toward Ra-deng from *Tushita*. Dom-ton-pa presided over the monastery for eight years.

At Ra-deng there is a golden image of Milaras̱-pa, the famous Buddhist saint. It is said that the *Jungar* Mongolian Chief, who persecuted the Ñiñ-ma[4] Buddhists in 1716, on his way to Lhasa visited Ra-deng, and was much astonished when he was told that the hair on the head of the saints' image was not artificial. In the library of Ra-deng there were many rare ancient Sanskrit works kept sealed by the Government of Lhasa. Ra-deng was the chief seat of the first and the earliest Buddhist hierarchy of Tibet and belonged to the Kahdam-pa School.

The Monastery of GAH-DAN.

དགའ་ལྡན་རྣམ་པར་རྒྱལ་བའི་གླིང་།

Tsong-khapa the great Buddhist reformer of Tibet, in fulfilment of a certain prophecy of Buddha, in the year 1408 A.D., established the grand annual prayer congregation of Lhasa, called the Mon-lam[5] chen-po. After making offerings to the gods he prayed for the welfare of all living beings. In the autumn of the same year he examined the auspicious signs regarding the suitability of a plot of land situated on the hill of Dok-poiri[1] with a view to erect on it a great monastery. In the rocks of that hill he observed many religious symbols such as the sacred mystic syllables "Om maṇi-padme hûm, om vajra pāni hûm," etc., and seeing that there was some scarcity of water, he touched with his hand the water of a little fountain that trickled down. On further examination the fountain proved to be the source of a streamlet. In the midst of the rocks of Dok-poiri he found several fossil conch-shells one of which having its whorls from right[2] to left was believed to have been used by the Buddha himself. From a rock-cavern in the neighbourhood he unearthed a mask believed to have been used by the Lamas during King Thisrong-deu tsan's[3] time. It had the miraculous power of dispelling all the evil spirits of the place. On this auspicious place Tsong-khapa laid the foundation of the world-renowned monastery of Gahdan. Within the remaining months of the year the Dukhang-Uma[4] (central congregational hall), seven cells for the residence of monks, and a building for the high-priest's residence, were finished. As soon as the monastery approached completion, presents of gold, silver, precious stones, and other articles from the pious flowed to it from different quarters. The number of monks increased every year. Tsong-khapa furnished the monastery with numerous religious books, objects and symbols. In the 64th year of his age he erected the *Tsang-khang*[5] the principal chapel in the monastery. This was followed by the *Gon-khang*,[6] the chapel of the hideous looking gods of mysticism. Then were constructed the *Khyamra* or courtyard, and overhanging it all round, porticos resting on 70 pillars. The *Tsang-khang* or chapel of worship was provided with a large image of the Buddha, three superb mansions of the gods of the *Tushita* heaven made of precious stones, with Bhairava, Mañju Çrī, the deities presiding over the destinies of all living beings of the world and with the huge images of the four Lokapāla. He also enriched the library with many rare books of Buddhism. At Gahdan there are now only two colleges for religious instruction to 3,300 monks, *viz*:—

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[1] ཁྱུང་མགོ་ཅན།

[2] ཨ་ཏི་ཤ། The name by which Dīpaṃkara Çrījñāna the high-priest of Vikrama Çīla *Vihāra* of Magadha is known all over Tibet. He was Dom-ton-pa's spiritual teacher and died at Ñe-thang near Lhasa only three years before the foundation of the monastery.

[3] སྨན་ལྷ། [4] རྙིང་མ། [5] སྨོན་ལམ་ཆེན་པོ།

(1) Çar-tse Tva-tshang,[7] where metaphysics are taught.
(2) Chyang-tse,[8] where esoteric Buddhism and mysticism are taught.

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[1] འབྲོག་པོ་འི་རི།

[2] དུང་དཀར་གཡས་འཁོར།

[3] ཁྲི་སྲོང་ལྡེའུ་བཙན།

[4] འདུ་ཁང་དབུས་མ།

[5] གཙང་ཁང་།

[6] མགོན་ཁང་།

[7] ཤར་རྩེ་གྲྭ་ཚང་།

[8] བྱང་རྩེ།

Later on, during the ministry of Tsong-khapa's illustrious successors, the monastery became converted into a grand university both for secular and religious education.

In the temples erected by *Gyal-tshab*[1] Darma Rinchen and Dul-dsin the most remarkable object is the Nam-gyal[2] *Chorten*,[3] which contains the remains and personal properties of the great reformer. A satin tent hangs over the altar containing the urn. During the ministry of Gedun Phun-tshog Lozang Tanzing,[4] Tashi Badur the great Khan of Kokonar covered the silver tomb of Tsong-khapa with thin plates of gold. (The gold used there is said to have been one year's revenue derived from Kham). On the right and left of this central tomb-*chorten* there are the tombs of the disciples and the illustrious successors of the founder. In some of them are placed their respective statues.

In the chapel, called Serdan-Tsangkhang[5] (golden pure hall) at the centre of the great temple called Yang-pachan, there are the images of Buddha, Maitreya, and Amitābha. In the *Gonkhang* the life size statues of Kushi Khan[6] and his generals are placed in martial attitude. Besides these, stand several mythological warriors all in divers frightful attitudes. In the chapel called Dubchoi[7] Tsang-khang the remarkable thing is the image of Çamvara the chief of the *Tantrik* deities, with the *Sakti* (female energy) in his clasp.

In the Lama-khang a statue of Tsong-khapa, his works in original, painted tapestries, a set of Kahgyur scriptures written in gold, etc., are among the remarkable articles. This was Tsong-khapa's study in his old age. There are also several *Chortens* and an image of Vajrā Bhairava, the fearful defender of Buddhism. In the Sarma-khang, erected by Lodoi Choikyong,[8] there are the images of the Buddhas and Bodhisattvas made of gold, sandal-wood, medicinal minerals besides numerous *chortens*, tapestries, pictures, etc. In the De Çeg[9] Lhakhang, *i.e.*, the temple of the Tathāgata there are eight silver *chortens* consecrated to the eight Buddhas. The most prominent of the images of the temple called Chyamkhang is that of Maitreya, the future Buddha, which is said to have come flying from Magadha. Beside it, stand in row the images of several Bodhisattvas. In the Zim-khang[10] the private residence of Tsong-khapa, which contains the chair of the great reformer, is to be seen the curious image of the hero Khanda Kapāla with a halo of variegated colours round his head. In the ascetical cell called *Hod*salphug[1] (the cavern of light) where Tsong-khapa used to perform ascetical meditation the images of the terrific Vajrapāṇi and his retinue attract the attention of the pilgrims. In the interior of the hall of priestly assembly called Dukhang-Karpo,[2] the Serthi[3] (the golden chair, *i.e.*, the hierarchical throne) and the statue of Tsong-khapa impress the faithful pilgrim with awe and reverence. Phola Jûng Wang provided this temple with a gilt dome built after the Chinese style and deposited in it a set of 108 volumes of the *Kahgyur* scriptures written in gold. In the Nai-choikhang[4] a tooth of the saintly reformer, called Tsem-Hodzer-ma[5] (the lustrous tooth) and the image of the thousand armed Avalokiteçvara whose eleven heads look with eyes of mercy on all living beings of the world, are remarkable.

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[1] རྒྱལ་བའི་ཚབ། [2] འདུལ་འཛིན།

[3] རྣམ་རྒྱལ། [4] དགེ་འདུན་ཕུན་ཚོགས་བློ་བཟང་བསྟན་འཛིན།

[5] གསེར་ལྡན་གཙང་ཁང་། [6] ཀཽ་ཤྲི་བསྟན་འཛིན་ཆོས་རྒྱལ།

[7] གྲུབ་ཆོས། [8] བློ་གྲོས་ཆོས་སྐྱོངས།

[9] བདེ་གཤེགས། [10] གཟིམས་ཁང་།

In the college of Chyang-tse, there is an elephant illustrative of one of Buddha's former births with a number of devout followers, all made of horn. There are also some representations of sainted fairies called Khandoma,[6] and a set of *Tantrik* bone ornaments including strings of beads, earrings, chains, amulets, etc., all made of human bones. All these are said to have once been used by the Indian saint Naropa. Naropa's mitre-shaped crown and his Tshebûm (pot of longevity) containing consecrated water which never dries, are looked upon by devout pilgrims as wonderful objects of veneration. In the Gonkhang of this college there are terrific representations of the Lord of Death and his frightful companions, messengers, and guards. In the *Parkhang* (printing house) are to be seen Tsong-khapa's voluminous works—all engraved on wooden blocks which are piled up in different rooms from which impressions can be had on *daphne* paper, at any time, at a small cost. In the temple of Yangpa-chan[7] there are the scenes of Buddha's triumph over Māra (the evil one) and his legions. In the outer passage of circumambulation called *Chyi-kor*[8] pilgrims are shewn many self-existent (*Rang-Jûng*)[9] sacred letters, figures, and fountain heads, finger-marks and footprints on rocks, and outside of this passage there is a lofty seat consecrated to the mountain god of Ma-chen Pomra, who is said to have patronised Tsong-khapa in his arduous works. The successors of Tsong-khapa, who are appointed by election from among the most learned and pious Lamas of ordinary birth, occupy the hierarchical throne called *Serthi.* They are, therefore, called Gahdan *Thi-pa,*[1] *i.e.*, President or Chairman of Gahdan. Men of learning generally resort to Gahdan. Its monks, for the excellent education they get in the university, always rise to distinction in the public service both secular and religious. All sections and classes of men are represented at Gahdan.

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[1] འོད་གསལ་ཕུག།

[2] འདུ་ཁང་དཀར་པོ།

[3] གསེར་ཁྲི།

[4] གནས་ཆོས་སྐྱོངས།

[5] ཚེམས་འོད་ཟེར་མ།

[6] མཁའ་འགྲོ་མ།

[7] དབྱངས་པ་ཅན།

[8] ཕྱི་སྐོར།

[9] རང་བྱུང་།

The monastery of Sangkhar which contains 200 monks at Dachan,[2] north of Lhasa, was founded by Tsong-khapa under the auspices of a rich noble named Rinchen Shun-pa of Tag-kar. It is under the supervision of the Gahdan *Thi-pa.*

The Monastery of SERA.

སེ་ར་ཐེག་ཆེན་གླིང་།

The monastery of Sera (literally, wild rose) was founded by *Cham-chen-choije* Çākya Yeçeṣ[3] in 1418, the year of Tsong-khapa's death.

The Governor Neẖu-pa who patronised Tsong-khapa and his disciples, frequently used to invite them to Sera-tse,[4] a retired hermitage on the top of the hill overhanging Sera. On these occasions *Choije* devotedly served the reformer, in consequence of which Tsong-khapa predicted a great future for a monastery which *Choije* would found in that neighbourhood. A saintly Lama while sitting in meditation, cast his eyes on a spot lower down the hermitage which was filled with wild rose plants in blossom. He predicted that some day there would be a monastery there. Emperor Yûnglo of the Tāming dynasty, had sent an invitation to Tsong-khapa to visit Peking; but the great reformer, finding *Choije's* time fully occupied with the more important work of religious reformation, sent Çākya Yeçes as his representative. Yûnglo did honour to the Yellow-cap Church by showing every consideration to this disciple of the reformer on his arrival at Peking where *Choije's* first act was to bring about the recovery of the Emperor from a serious illness by the efficacy of his religious services. The temple of Maitreya, then recently built by the Emperor, was placed in his charge and he was given the name of Chyam-chen *Choije.* Under the Imperial auspices *Choije* founded the monastery of Hwang-sze (Yellow-temple) in one of the imperial gardens of Peking situated a few miles to its north. For diffusing the reformed creed of Tsong-khapa in China he had taken with him several of Tsong-khapa's works and a set of block-print Kahgyur scriptures. After converting the Lamas of Peking to the reformed Yellow-cap Church he returned to Tibet. On the way he paid his reverence to Tsong-khapa making rich presents to him. Subsequently, he founded the monastery of Sera *Theg-chen-ling*, which now contains 5,500 monks and exercises much influence in the secular and religious administration of the country.

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[1] ཁྲི་པ།

[2] བདེ་ཅན།

[3] བྱམས་ཆེན་ཆོས་རྗེ་ཤཱ་ཀྱ་ཡེ་ཤེས།

[4] སེ་ར་རྩེ།

He established a university in it with four *Tva-tshang* or colleges. Of these Gya-*Tva-tshang* belonged to the upper division of Sera and the remaining three, *i.e.*, Thoisam, Norpuiling, Chyipa Khaman *Tva-tshang*, and Ñag-pa *Tva-tshang* belonged to Sera Mēh, (sma*d*) *i.e.*, lower division of Sera. In the middle of the eighteenth Century two of the colleges were established. It still continues to be a favourite resort of learned men of Tibet and Mongolia. The monks of Sera belong to respectable families of Tibet proper, Amdo, Kham, Ñyagrong, Mongolia and Western China.

There are in the Dukhang (grand hall of congregation) the images of—

1. Buddha vanquishing Māra the evil one and a host of demons.
2. The sixteen Sthavira (Neh-tan Chu-rûg[1]) brought from China.
3. Several life-like images constructed by the famous artist Nehu Chang-wa.

In the Gonkhang (the temple assigned to the *Tantrik* deities there are—

1. The image of the six-armed Bhairava, constructed by Leggyan of Shwau.
2. Gon-po Choigyal with four arms.
3. The goddess Paldam Lhama (Kāli) on horseback, her legs being tied by a chain, probably as a punishment for her wicked conduct.

In the front wall there are painted representations of the invasion of Û by the Tsang army and their defeat by the Tartars in 1643, the scenes of war, and the images of fearful spirits, such as Gon-po De-mar, the genius (Chyarog-dong-chan, he with a raven's head), etc. On the western wall are painted the likenesses of the successive high priests of Sera, etc.

In the western corner of the upper congregation hall (Dukhang Gong-ma), are the images of Amitābha Buddha, the eleven-headed Avalokiteçvara and the four-armed Gon-po, Maitreya made of silver, the Bodhisattva (Çākya) as a citizen, and the eight spiritual sons of Buddha and also the Kah-gyur and Tangyur collections, all written in gold and silver.

In the temple of Chyam-chen Shal-reh Lhakhang, the image of Atiça with a *Chintamani* wishing-gem in his hand is conspicuous.

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[1] གནས་བརྟན་བཅུ་དྲུག །

In the Go-chye-khang there are the images of Buddha and a silver *Chorten.* In the further niché of the Dukhang there is a golden image of the coming Buddha. In the front hall of the Dukhang there are the Dharma Pāla. The most remarkable object in the passage of circumambulation round the monastery is a small *Chaitya* (said to be one of the 84,000 *chaitya* constructed by Emperor Açoka) which was brought from Magadha. There is also a *Tantrik image* of Hayagriba with the goddess Vajra Varāhi in his clasp.

The Monastery of DAPÛNG.

དཔལ་ལྡན་འབྲས་སྤུངས་ཕྱོགས་ཐམས་ཅད་ལས་རྣམ་པར་རྒྱལ་བ །

Dapûng the great monastery of lower Û, now the premier monastery of Tibet, was founded by Jam-yang Choije[1] in the year *Fire-monkey*, i.e. 1415 A.D. with 5,000 monks. His father Gah-wa Nor-shon, on account of his wealth, was believed to have been an incarnation of Vaiçravaṇa the god of riches. Jam-yang was born at Sam-yé, and admitted into the sacred order at Tsethang (Chethang). He received his first lessons in sacred literature from the abbots of Sangphu. At Gahdan, Tsongkhapa and his principal disciples ordained him with the final vows of the order of *Bhikṣu.* At Tashi Dokha, Tsong-khapa advised Jam-yang and his friend Namkha Zangpo, the Governor of Neḥu-Dsong, to found a monastery after the model of the ancient monastery of Çrī-dhānya Kataka of Southern India. One night, while Jam-yang was asleep in the fort of Neẖu-Dsong he saw in a dream the god Nam-ña Karpo telling him that if he founded a monastery at Dar-bag thang, situated in front of the hill called Gephel Rivo-che, he could get 5,000 monks to reside and study in it. Accordingly, he visited Dar-bag and Rivo-che. There he saw several fountains and small lakes called "the lakes of fortune." On another occasion, while seated on the margin of a lake situated on the top of Lang-chen ri, Tsong-khapa mentioned to him that that was "the lake of learning." Another night he dreamt that several men were assembled on a river's edge in order to cross it. Jam-yang at once swam to the opposite bank and threw a bridge across to enable others to follow him. After several such curious dreams he determined to found the monastery of Dapûng. Tsong-khapa supplied him with the necessary plan after the model of Çrī-dhānya Kataka, and his friend the Governor of Ne*h*u Dsong, furnished him with funds; and through the joint exertions of Jam-yang and his patron, Dapûng was founded. On account of the Governor's help the rich nobles of Tibet gave endowments of lands to it and sent their boys for religious education there.

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[1] འཇམ་དབྱངས་ཆོས་རྗེ །

Their example was followed by the merchants and other landholders, in consequence of which it soon became a favourite institution of the aristocracy of Tibet. Jam-yang established eight colleges for teaching the different branches of sacred and secular learning. In course of time the monastery became the principal seat of learning, and learned and wise men flocked to it from the different parts of the country. In discipline, moral culture and purity of life, the monks of Dapûng excelled the monks of all other similar institutions in Tibet. It soon claimed a university with seven colleges for the study of the different branches of sacred literature including metaphysics, logic, medicine, and one for that of profane literature for the benefit of the lay people. After Tsong-khapa's death, Jam-yang presided over the Monlam-chenpo of Lhasa and raised it to prominence. From this circumstance the power of Dapûng over the Monlam-chenpo became paramount and continues so to this day. The president of the Monlam-chenpo called the Dapûng Shal-ngo, exercises supreme authority in the spiritual affairs of the country during the months of January and February, when the Talai Lama himself submits to the resolutions passed by the congregated clergy on the occasion. The chair of Dapûng was filled by many able and distinguished sages, among whom Paḷdan-senge, one of the disciples of Tsong-khapa, Jam-yang Gahlo, and Yontan Gyatsho of Tsang-thon, were the most learned. On the rise of Dapûng with its great university the glory of Gahdan was overshadowed. The fame of the Gahdan *Thipa* as the profoundest scholar of the Yellow-cap Church was surpassed by that of the high priest of Dapûng. Under the presidency of Gedun-Gyatsho who was called Dapûng Tûlpaiku (incarnate Lama of Dapûng), the monastery with its university claimed precedence even over Gahdan. Gedun-Gyatsho in whom the spirit of Gedûn-dûb had appeared was called Gyal-wa ñi-pa (2nd Gyalwa). He was, therefore, the first incarnate hierarch of the Yellowcap Church, from whose time the monastery enjoyed the proud name of Chyog nampar Gyal-wa—victorious in all the quarters, which expression is preserved to this day in the silver currency of Tibet.

Dapûng contained the following *Tra-tshang* or colleges :—

1. Tashi-gomang.
2. Lozang-ling.
3. Thoisam-ling.
4. Ñag-pa Namgyal-ling.
5. Ku chyog-ling.
6. Choikhor-ling.
7. De-yan.

Of these only four are now in existence. Thoisam-ling, Ku-chyog-ling and Choikhor-ling were abolished during the presidencies of Sonam Gya-tsho and Lozang Gyatsho. There are at present 7,700 monks in the monastery, most of whom are recruited from noble families in Kham, Mongolia, Gyarong, Ñag-rong, Amdo, Û and Tsang. In the Zimkhang, Jam-yang *Choije's* residence, situated behind the grand cloister, is the image of Jam-yang Sûng-chon (speaking Muñju Çrí). In the central *Tsang-khang* (chapel) are the golden images of the Buddhas of the past. present and future in sitting posture and surrounded by their respective eight disciples. In the temple of Na-chu-tug Lhakhang there are the sixteen *sthavira* (sages) brought from China by the illustrious Phag-pa during the reign of the Emperor Khublai Khan. In the new chapel consecrated to Champa there are—the huge image of the coming Buddha, representing him as a youth of twelve, and a silver trident used by Jam-yang himself. In the Kalzang Lhakhang there are one thousand Buddhas, all made of copper gilt with gold. In the Kahgyur Lhakhang, *i e.*, the library of sacred books, there are Kahgyur collections all written in gold. In the cloister of the N̂ag-pa *Tva-tshang* (*Tantrik* College), there are many articles very sacred to the Buddhists. On the right of the image of Vajra Bhairava is the statue of Tsong-khapa and on its left is the image of the Lord of Death with his horrid train. The principal temple is three-storeyed. The principal hall of congregation called the Dukhang Chenpo on the ground floor contains 240 wooden pillars, distributed over an area of 34,560 sq. ft. to accommodate 7,700 monks when they assemble to perform religious service.

The third hierarch was Paṇ-chen Sonam Tag-pa; the 4th, Sonam Gyatsho, the Dalai Lama; 5th, Yontan Gyatsho, Dalai Lama; 6th, Paṇchen Lozang Choigyan of Tashilhunpo; 7th, N̂ag-wang Lozang Gyatsho, the 5th Dalai Lama; 8th, N̂ag-wang Yeçe Gyatsho (Pakardsin-pa); 9th, Kalyang Gyatsho (7th Dalai Lama) in the year 1726.

The Monastery of MERU was one of the four sanctuaries founded at the four cardinal points of Lhasa by King Ralpachan in the 9th Century A.D. It was abolished by King Langdarma, but was afterwards restored to its former condition and formed the metropolitan monastery.

CHAGPOIRI is a monastic institution with classes for the study of medicine. It is called the Man-pa *Tva-tshang* or the Medical College. It does not contain more than one hundred pupils.

Phabong-kha was anciently King Srong-tsan Gampo's favourite resort, where he used to propitiate his tutelary deities. The seven early monk-scholars called Sedmi-midûn also had their residence there. During the persecution of Buddhism by King Langdarma there existed no monastic establishment at Phabongkha. Geçes Tag-kar-pa revived the institution. During the hierarchy of Sakya, Dogon Phagpa repaired the monastery and gave rich endowments for its maintenance, but during the dispute between Sakya and Phagmodû it again dwindled into insignificance till it was repaired by Thegchan Choigyal and revived by Je-Deleg-N̂ima. But again, when internal discords convulsed Tibet, it declined and remained in a neglected condition till the year *Earth-sheep* of the tenth cycle when Minister Paljor Lhûndub of the family of Khon rescued it from ruin. Since then it has been flourishing.

Sangphu Neḫu thang, situated on a hill beyond N̂ethang, was founded by Dôg Leg-çe in the same year when Sakya was established.

13. *Notes on an Indian Worm of the Genus* Chætogaster—*By* Nelson Annandale, B.A., D.Sc., *Deputy Superintendent of the Indian Museum.* (With one plate.)

The fresh-water worms of the genus *Chætogaster* are held by some authorities to constitute a separate family; but Beddard,[1] whom I have followed in drawing up my account of *Ch. bengalensis*, regards them as belonging to the Naidomorpha, a rather obscure group of Oligochætes which appears to be well represented in the Calcutta tanks. Hitherto the genus, well known in Europe and recorded from America, does not appear to have been reported from within the limits of Asia. The Calcutta species is not uncommon and I have taken specimens of what may be a second in the Botanical Gardens at Sibpur. This merely proves, as I have already pointed out to the Society, that a vast field lies open to any naturalist who would devote himself to the study of Indian pond life. I am much indebted to my friends Mr. F. F. Laidlaw, of Owen's College, Manchester, and Dr. J. H. Ashworth, of the University of Edinburgh, both for the generic identification of the worm in the first instance and for references to literature later. My thanks are also due to Major A. Alcock for his unfailing sympathy and assistance in the work undertaken.

Description of *Chætogaster bengalensis*, sp. nov.

Prostomium forming a large, sub-circular sucker: another smaller sucker at the posterior extremity of the body. Œsophagus longer than pharynx, with two well-marked dilatations, the posterior of which shows indications of a second constriction in its posterior third when empty. The anterior dilatation is covered with large, flat, polygonal cells of a faint yellowish colour. There is a sense-organ (otocyst?) in the brain: the remainder of the nervous system normal for the genus, the somewhat discrete nature of the ventral ganglia, their number in the first few segments and the separation of the two ventral nerve chords in the same region being characteristic. The first pair of nephridia is larger than the others posterior to it. Setæ arranged on each side of the ventral surface in bundles of from 15 to 17. Body colourless and almost transparent. Length varying greatly with state of contraction, at least 10 mm. when the body is fully expanded. There is a very distinct flattened area on the ventral surface between the two bundles of setæ. Outward appearance somewhat resembling that of an *Æolosoma*.

Possibly this worm should be regarded as the type of a new genus; but it seems more convenient to regard it for the present as a *Chætogaster*.

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[1] *A Monograph of the Order Oligochæta*, p. 304. Oxford, 1895.

BIONOMICS OF *Chætogaster bengalensis*.

The *Chætogaster* of the Calcutta tanks is usually found clinging by means of a posterior sucker to the external surface of the body or the edge of the shell of a water-snail. When disturbed it withdraws itself entirely within the latter. It does not confine itself to any one species of snail, but generally chooses a *Limnæus*, *Limnophysa* or some similar species, apparently because these genera are common in its habitat, do not possess an operculum and have a wide aperture to their shells. In one instance I saw, in an aquarium in which snails were somewhat scanty, a solitary worm attempting to establish itself on a *Planorbis;* but the connection was only temporary, not lasting for more than a few minutes. The mouth of the shell in this genus, though there is no operculum, is evidently too constricted to be suitable for the worm, which is generally gregarious. As shown by the figure (plate III, fig. 1), a considerable number of individuals may establish themselves on a single snail. Occasionally *Ch. bengalensis* quits its host altogether and either wanders away in search of another or drops to the bottom. This happens whenever the water becomes foul or reaches too high a temperature (in an aquarium when the sun, falling directly on the surface, heats the water), or when too many individuals are settled on a single host after rapid asexual multiplication. Before fixing themselves on a fresh snail they frequently crawl over the external surface of the shell.

Progression is mainly effected by a series of contractions and elongations of the body, aided by the two suckers. The posterior of these having been fixed to any surface, the body is stretched forward to its greatest extent. The anterior sucker is then applied, the posterior one set free, and the body contracted. As a rule, the ventral surface is not lifted, but something analogous to the "looping" of a leech or a Geometrid caterpillar, but not so marked, takes place very occasionally. When sinking through the water, as it does when its hold is released, the worm can change its direction slightly by moving the posterior part of the body from side to side; it cannot swim or raise itself upwards without support. The setæ appear to play a very small part in ordinary progression, except as aids in adhesion. Each bundle is capable of an independent rotatory motion somewhat resembling a rapid turn of the wrist. This movement is very useful when the worm is insinuating itself into a crevice, as it thrusts the body forward rapidly. All the setæ are frequently moved at once, although each bundle can be turned separately. The anterior bundles have a different function, as we shall see.

Although this species[1] lives in close connection with water-snails, it is not, strictly speaking, parasitic upon them; for it captures living prey and only uses its host, so to speak, as a beast of burden and a stalking horse. Carried along clinging to it by the posterior sucker, the body is extended outwards as far as possible and waived rapidly in all directions, the "head" being invariably free of the snail's shell. As soon as it comes in contact with the body of a small crustacean, the anterior sucker takes a firm hold. Its ventral surface is covered with small prominences, which are not grandular but mere projections of the epidermis. These probably give an additional grip, the limbs of the struggling prey becoming entangled amongst them. The anterior setæ do not project free from the ventral surface as in the posterior bundles, but are contained in a pocket or introvert in such a way that they lie below the mouth inside a lower lip or lobe which forms the wall of the posterior part of the prostomial sucker. As long as the body is elongated they are placed almost parallel to one another in a vertical line, leaving the aperture free; but as soon as the body is contracted, a rapid twist of their bases takes place and they spread out in a fan-like formation, so that the tips of the inner setæ of each bundle are practically in contact with those of the other side. (There is no difference in structure or arrangement between these setæ and those posterior to them, but the latter are considerably shorter). By the movement described the prey is seized by the setæ and conveyed into the mouth, which opens directly into a large pharynx with greatly thickened walls, a small lumen, and numerous muscle-bands radiating from it to the body-wall. A function of this organ seems to be to crush the prey to death; but a similar pharynx is found in species in which the food probably does not need crushing. A narrow slightly coiled passage leads into the first dilatation of the œsophagus. The cells on the surface of the latter probably have some digestive function ("liver cells") and the interior of the crustacea swallowed become disintegrated very largely in this chamber. Even at the moment of the passage of food into the second dilatation, the constriction between the two remains distinct. The feeble constriction in the posterior dilatation is a mere fold of the walls of the structure, allowing a certain enlargement to take place. The intestine which leads from the œsophagus to the anus is rather broad: this is rendered necessary by the bulky nature of the indigestible parts of the food, for the shells of small Copepods and Ostracods pass through the body of the worm practically unaltered, even the appendages remaining attached to the trunk in many cases.

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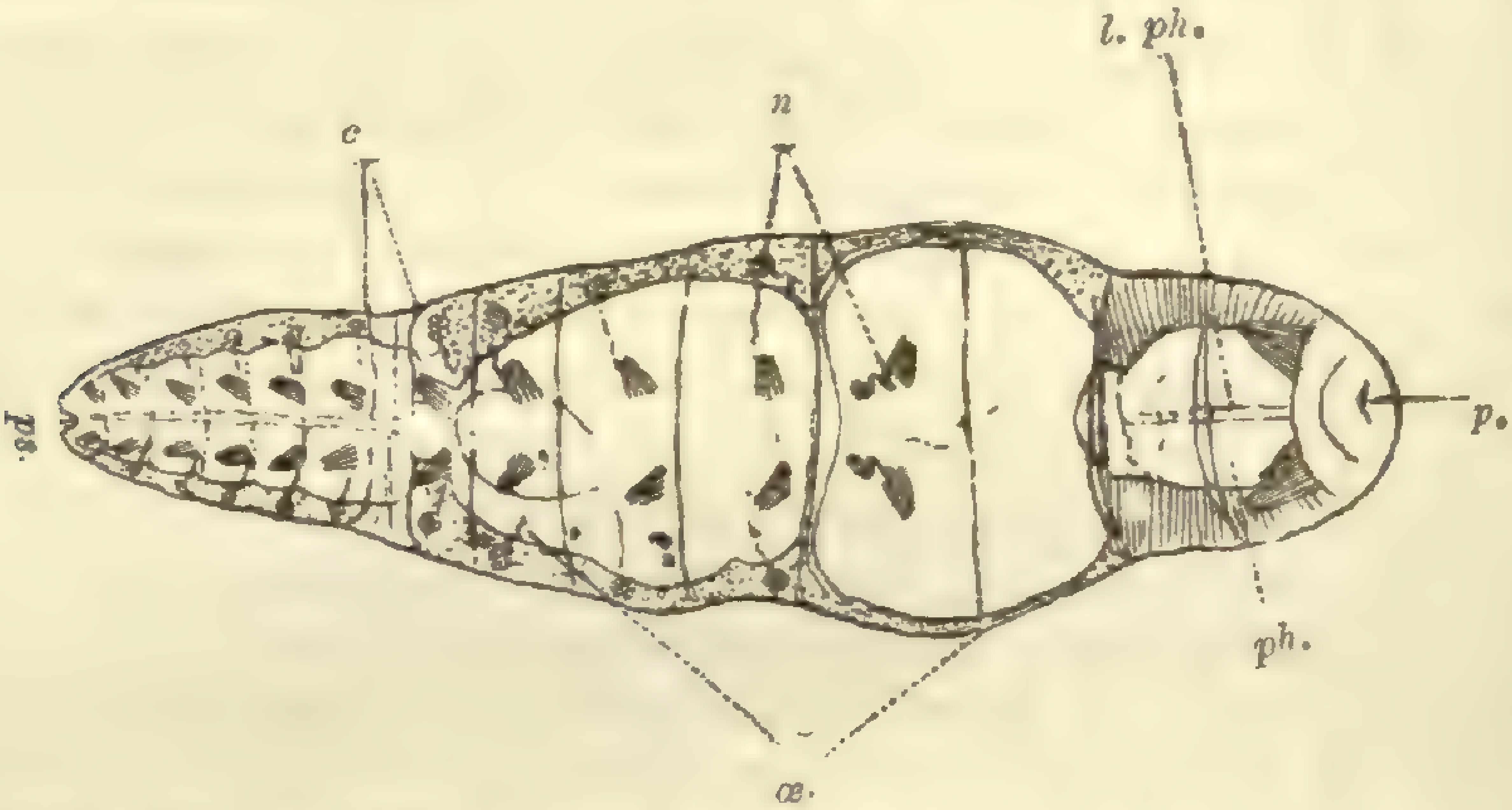
[1] The European species also live on water-snails, but some of them at any rate are said to be internal parasites. Dr. J. H. Ashworth has sent me a specimen of an English species in which the food probably consists of diatoms and the like.

Regarding sexual reproduction I have practically no information. During the period between December and April, throughout which I have had living specimens under observation, it does not take place and the sexual organs are imperfectly developed. Reproduction by fission is, however, active at this season. I find it a little difficult to say what is the normal number of segments present in the species, but it appears to be twenty or twenty-one. More than this number are, however, produced by budding from the penultimate segment, and at first it is impossible to distinguish between them and the original ones. When several have been produced, the most anterior can be distinguished from the others by a dilatation of the alimentary canal which ultimately becomes the pharynx of a new individual. The prostomium never takes its place as a regular segment in the series, but grows out as a lobe on the dorsal surface. The mouth of the young worm is in continuity with what will be the new anus of the parent and the shells of the food pass to the exterior of the old anus, at the extremity of the young individual, until the separation has been completely affected. This does not occur until at least 16 new segments (in addition to the old extremity) have been formed. The clitellum (10th and 11th segments) is already conspicuous, being devoid of setæ. In adult individuals, however, the glandular structure of its integument extends partially over another segment on either side.



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EXPLANATION OF PLATE III.

Fig. 1. *Chætogaster bengalensis* on a Water-Snail, X 2.
,, 2. Anterior extremity of an adult individual from below, showing nerve cords, etc. (*Much enlarged*).
p.—prostomium, *l.*—lower lip, *s.*—anterior setæ, *n.*—nerve chords, *g.*—ganglia.
,, 3. Diagram showing arrangement of the setæ in a similar bundle from the right side. Each dot represents a seta in cross-section.
,, 4. A bundle of setæ from the left side of one of the posterior segments, seen from behind. (*Much enlarged*).

(*Text figure.*)

Fig. 1. Young *Chætogaster bengalensis* just separated by fission from its parent. (*Somewhat diagrammatic as regards the nephridia*).
p.—prostomium, *ph.*—pharynx, *l.ph.*—lumen of pharynx, *œ.*—œsophagus, *c.*—clitellum, *n.*—nephridia. *p.s.*—posterior sucker.

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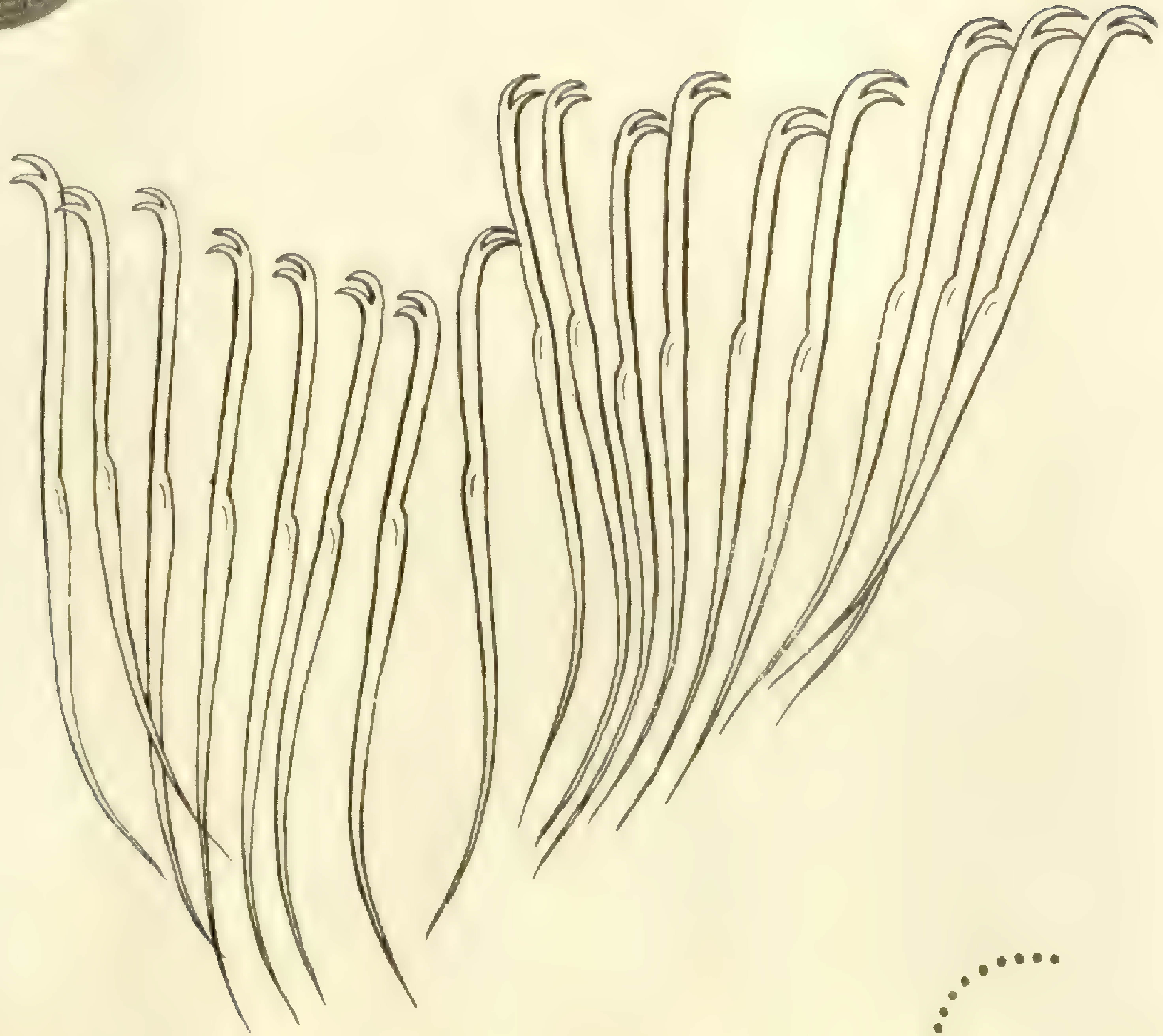

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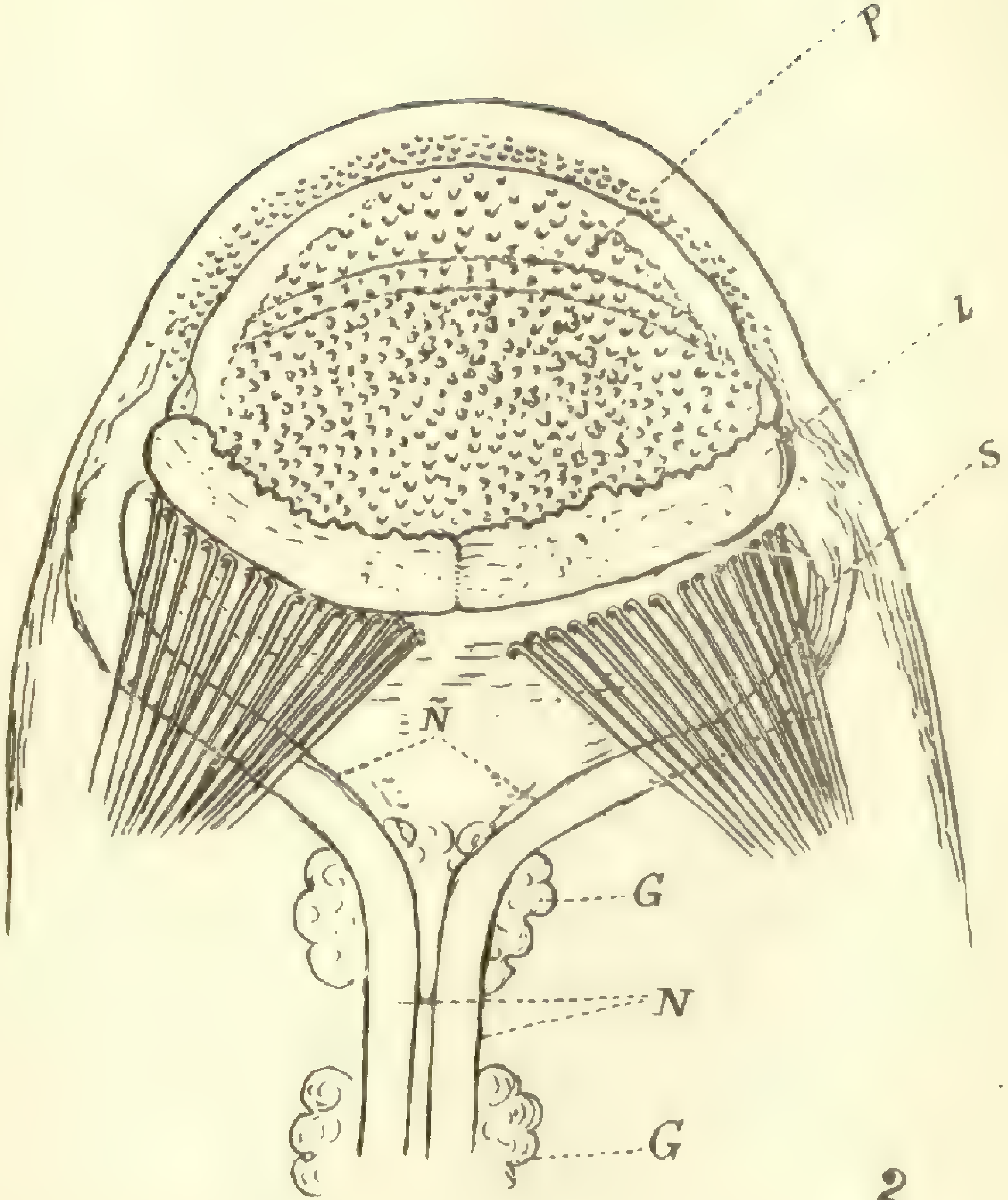

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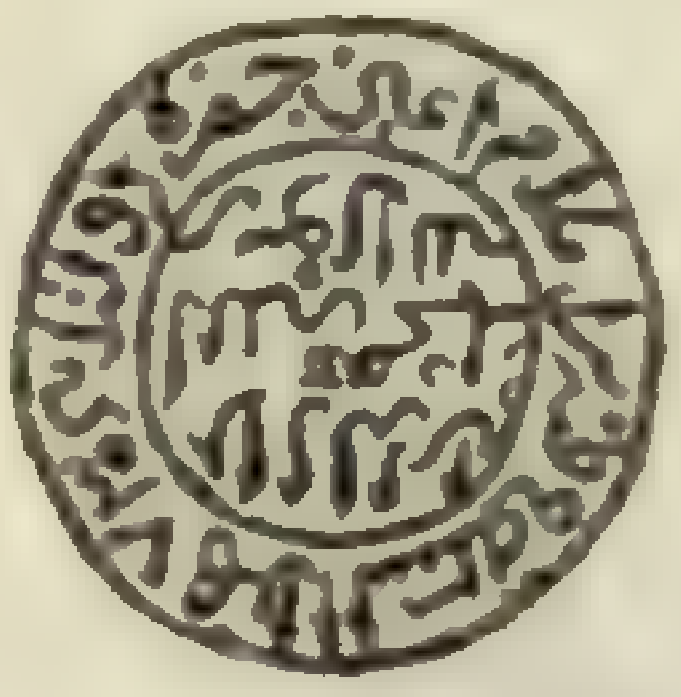

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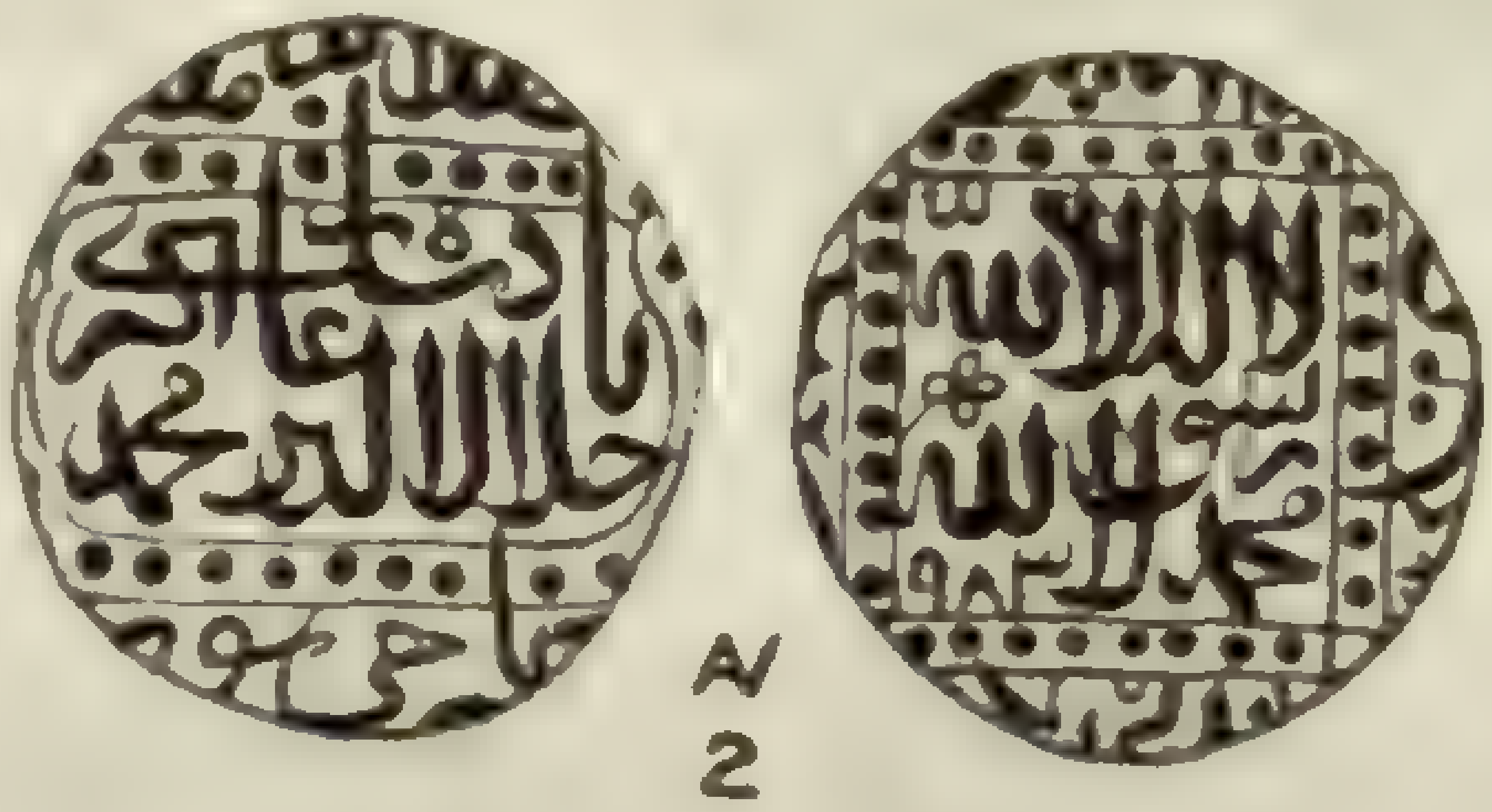

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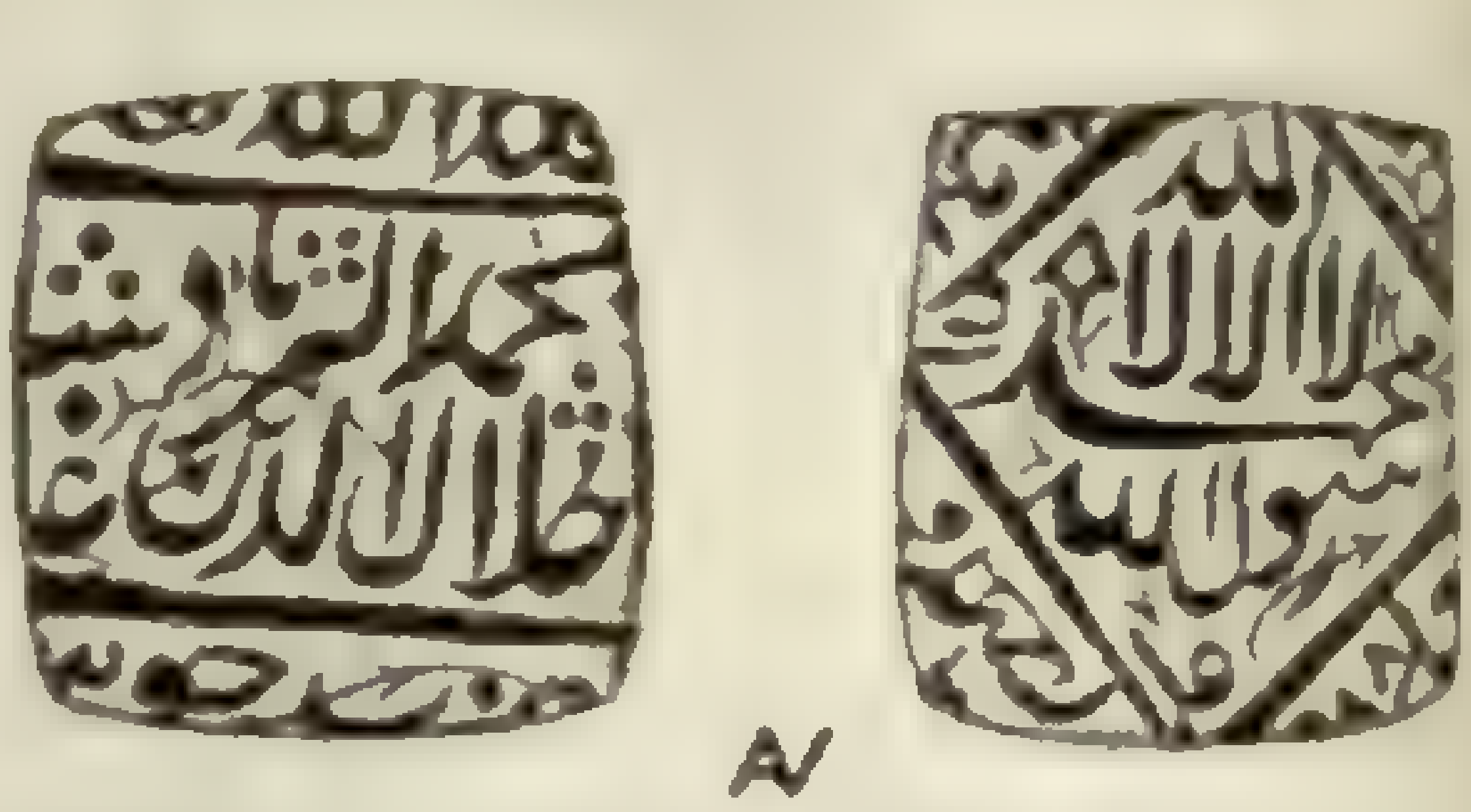

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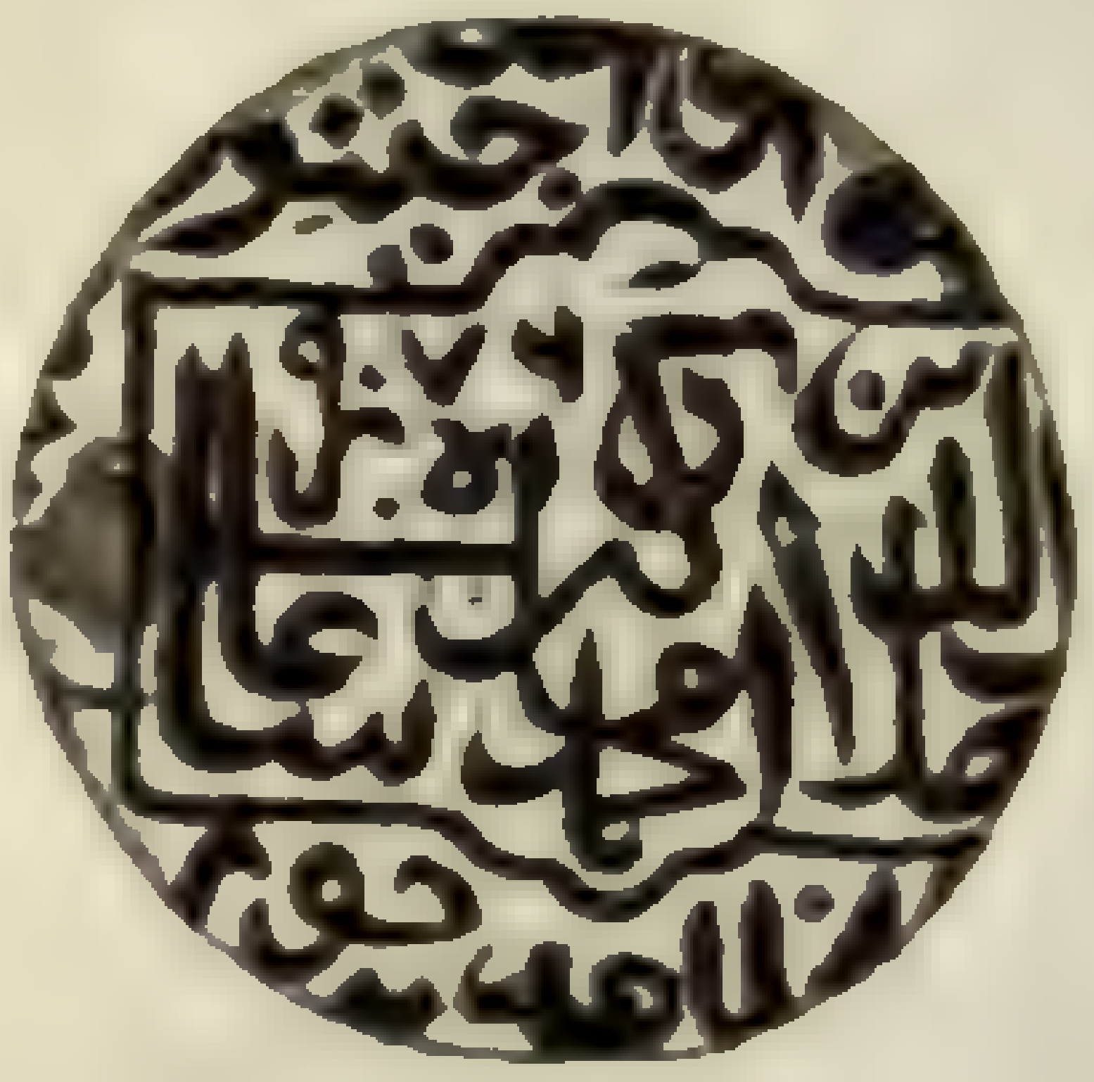

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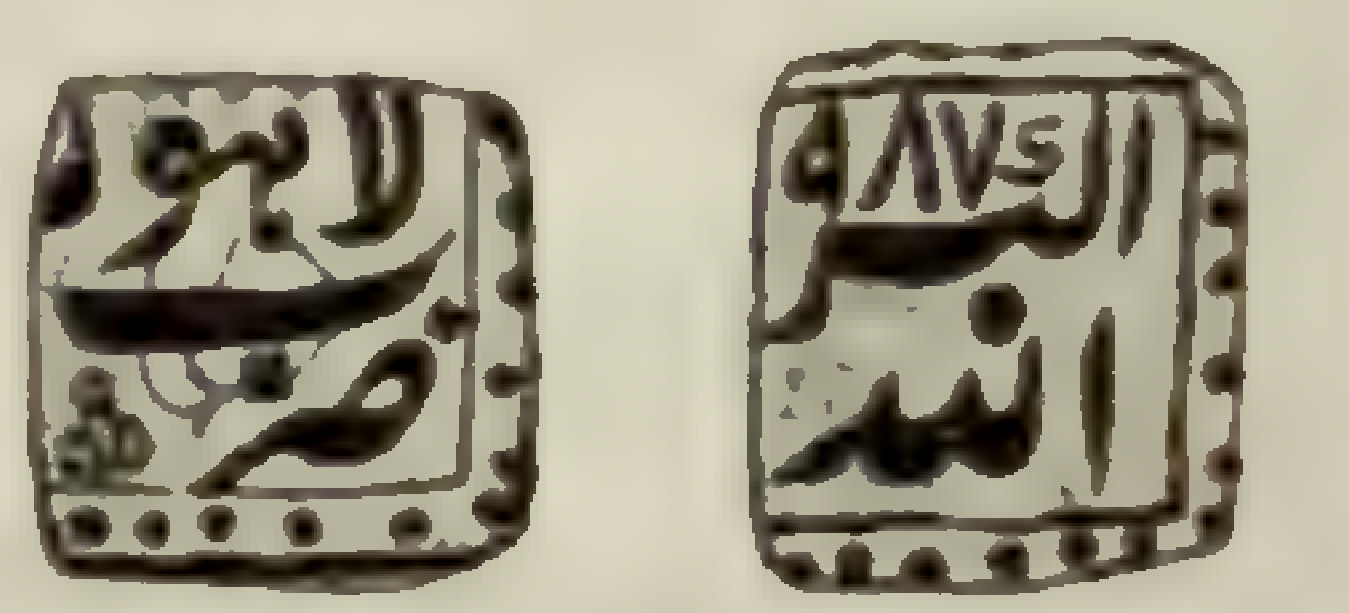

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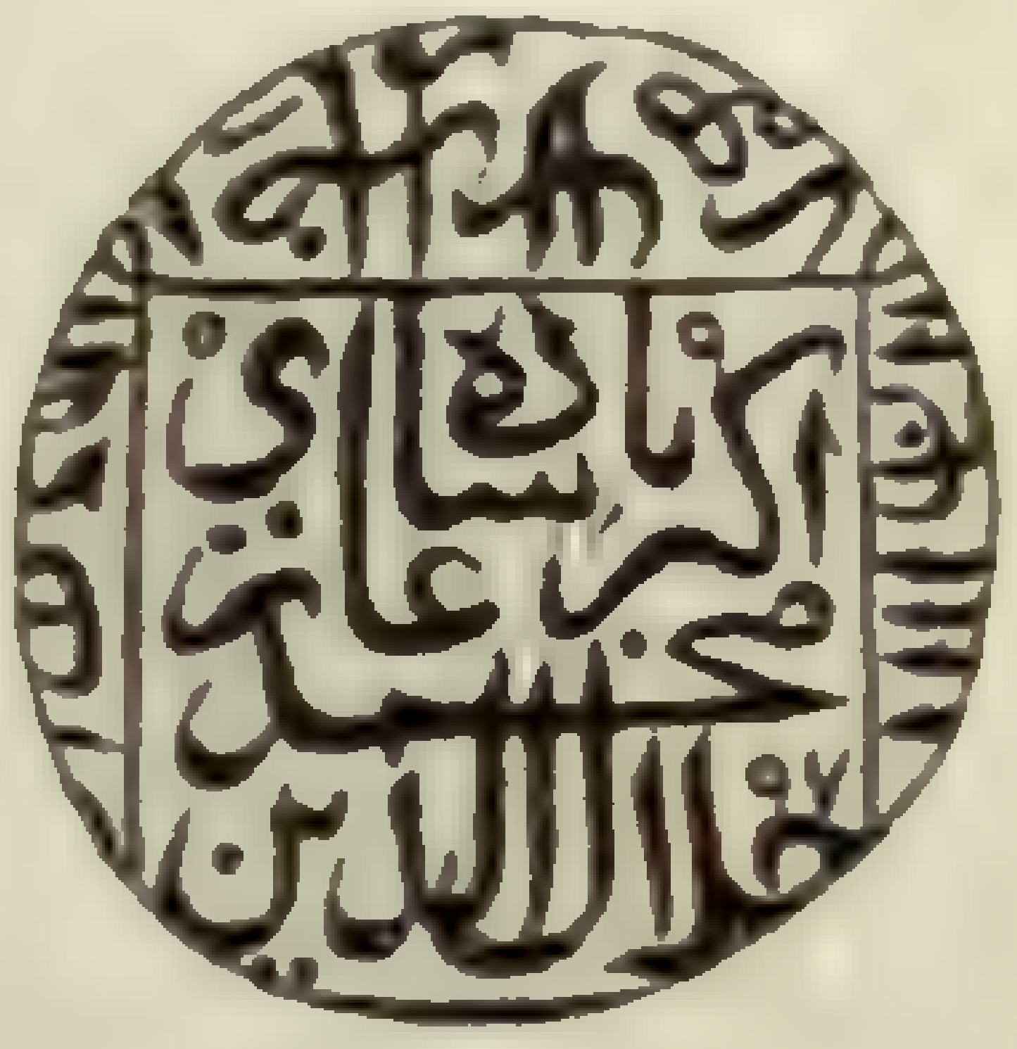

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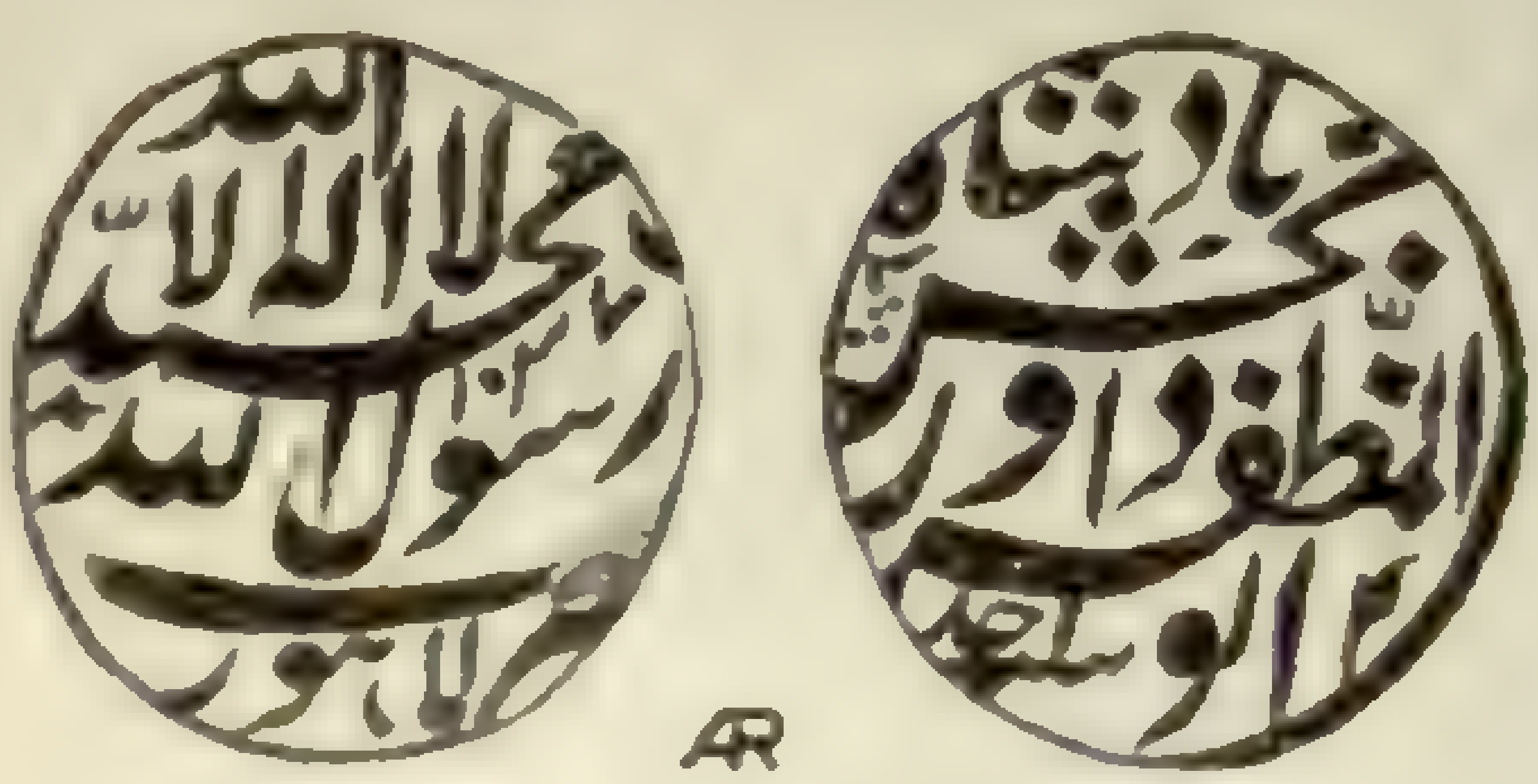

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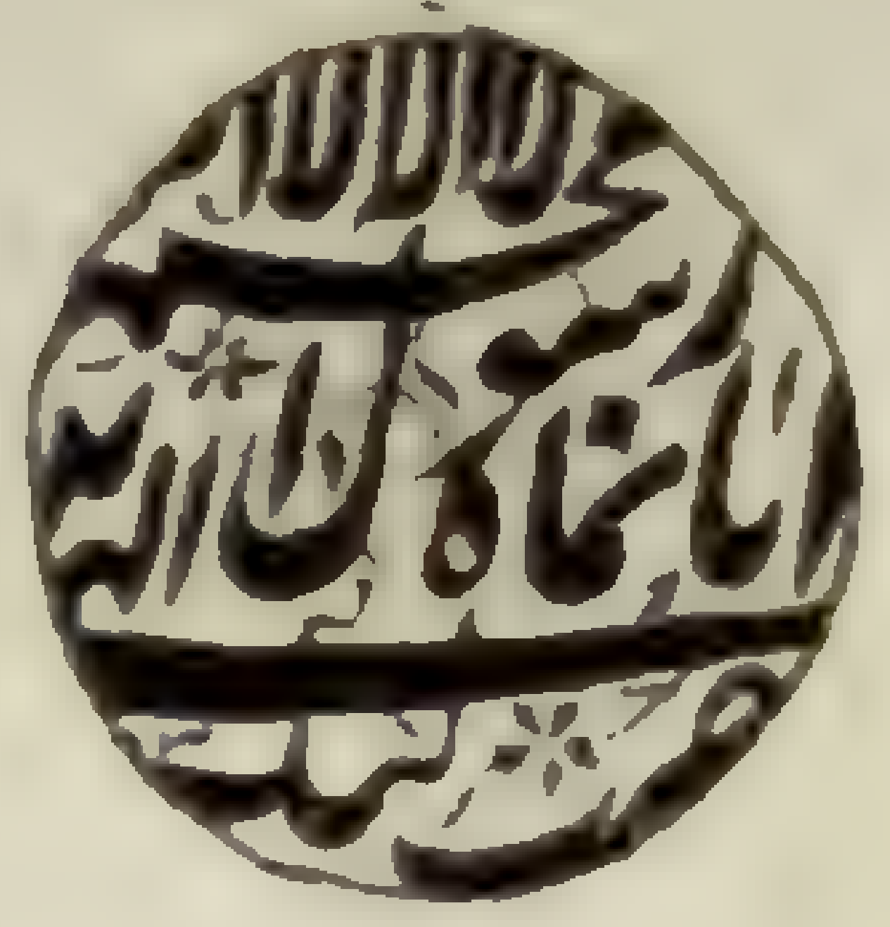

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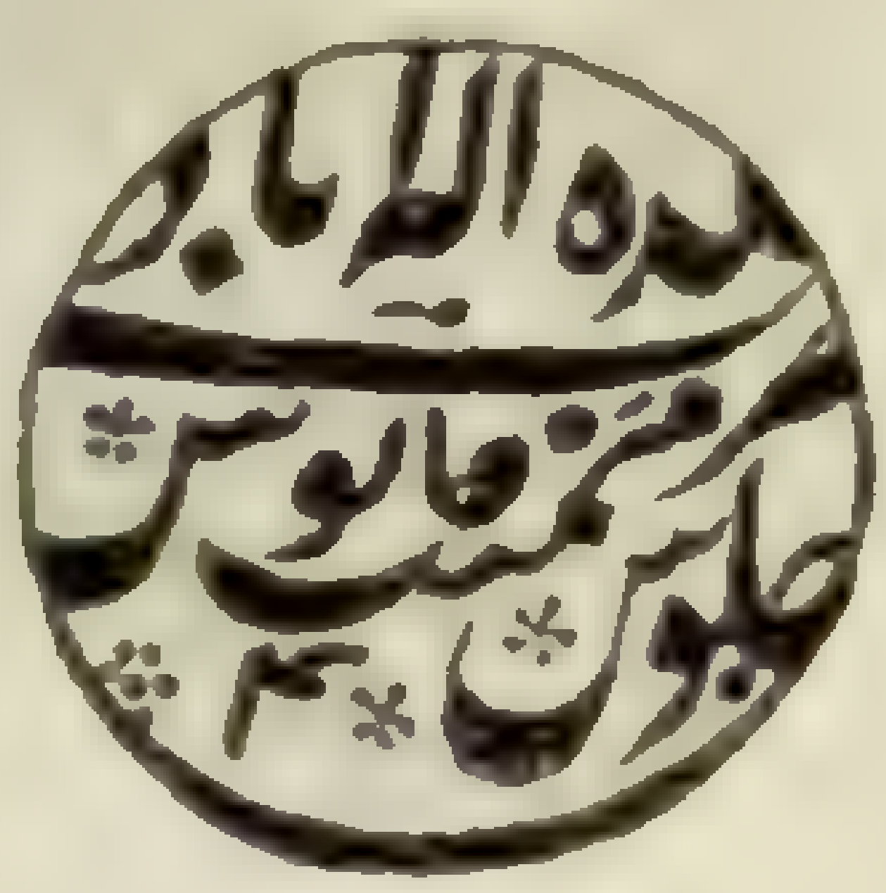

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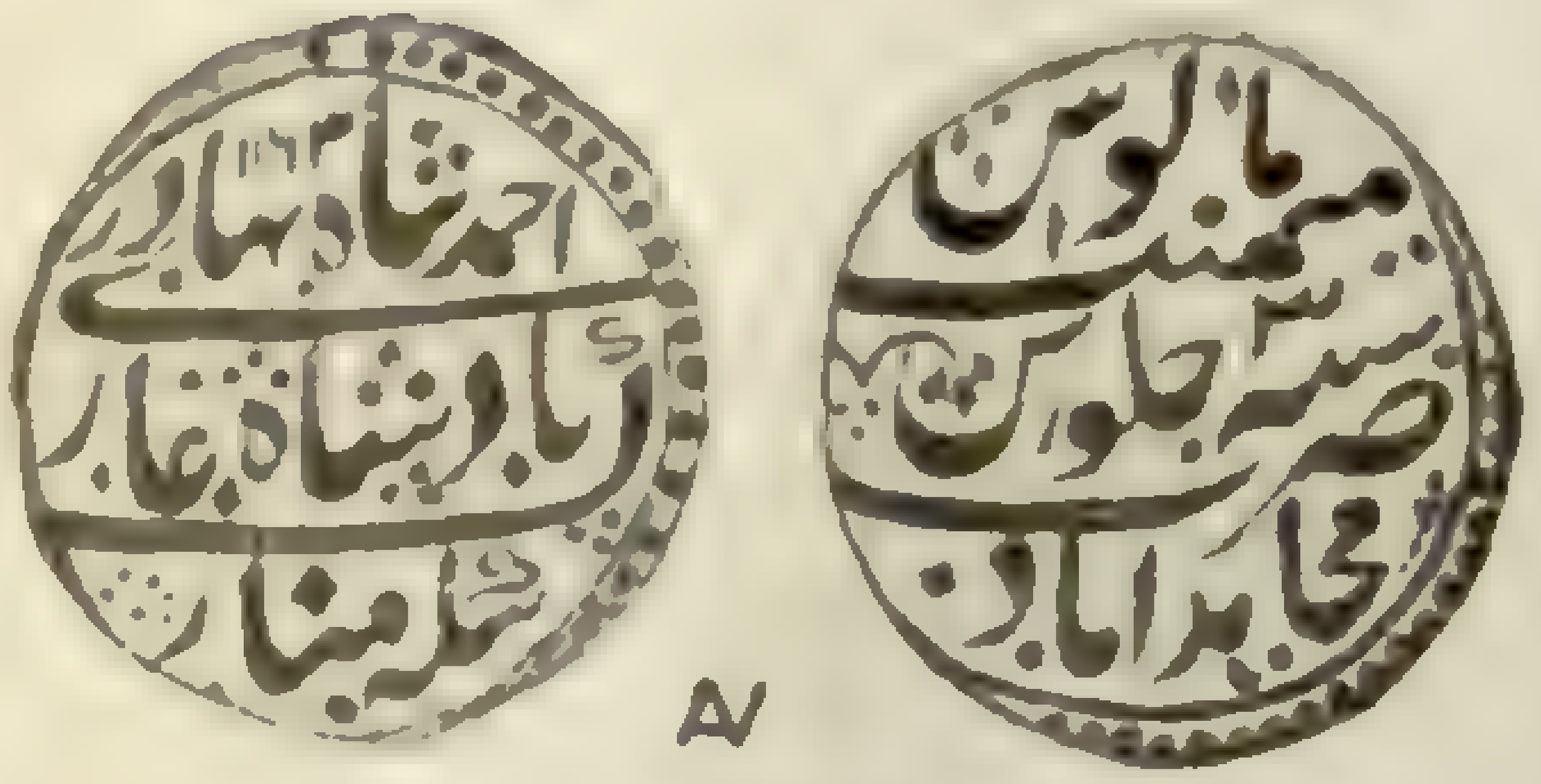

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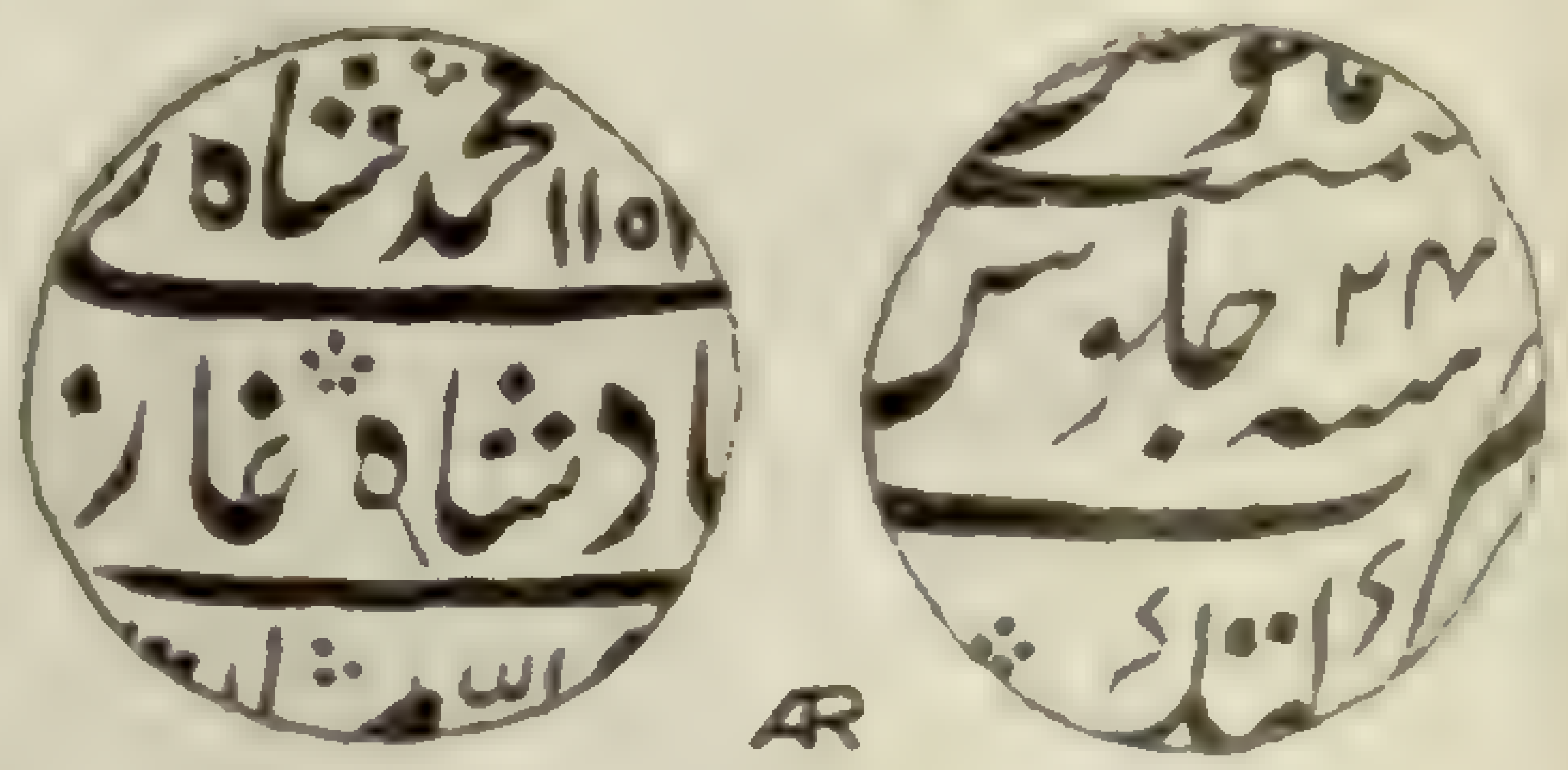

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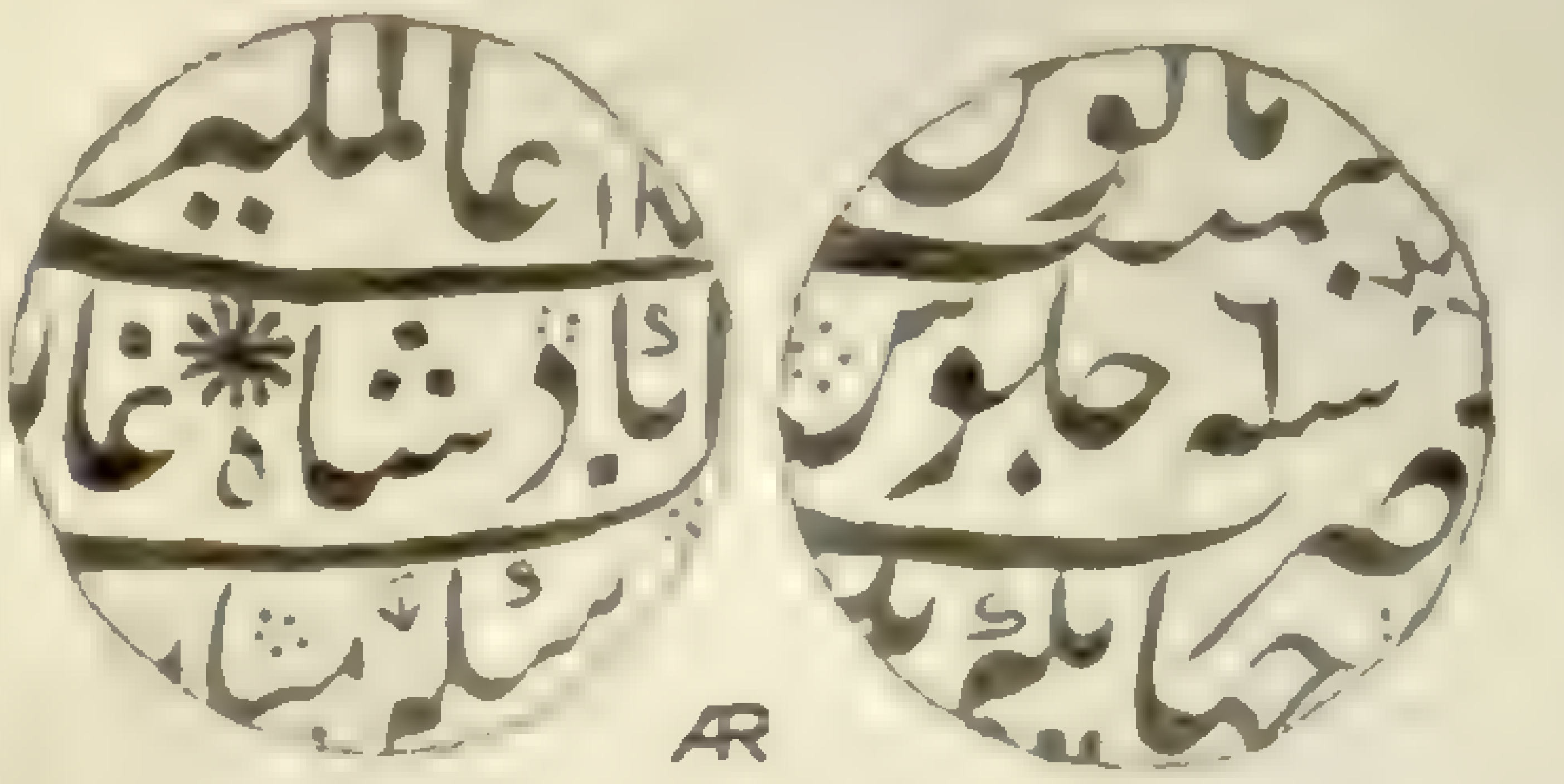

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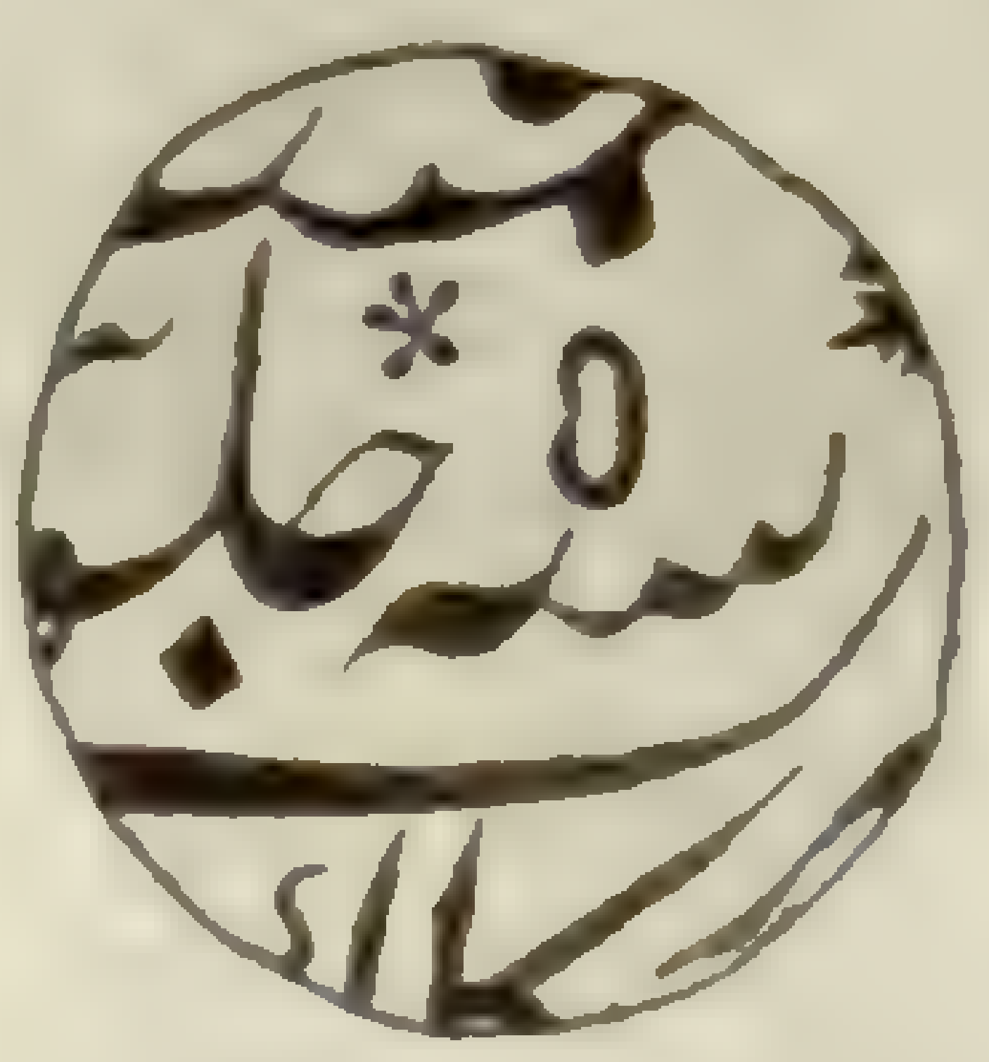

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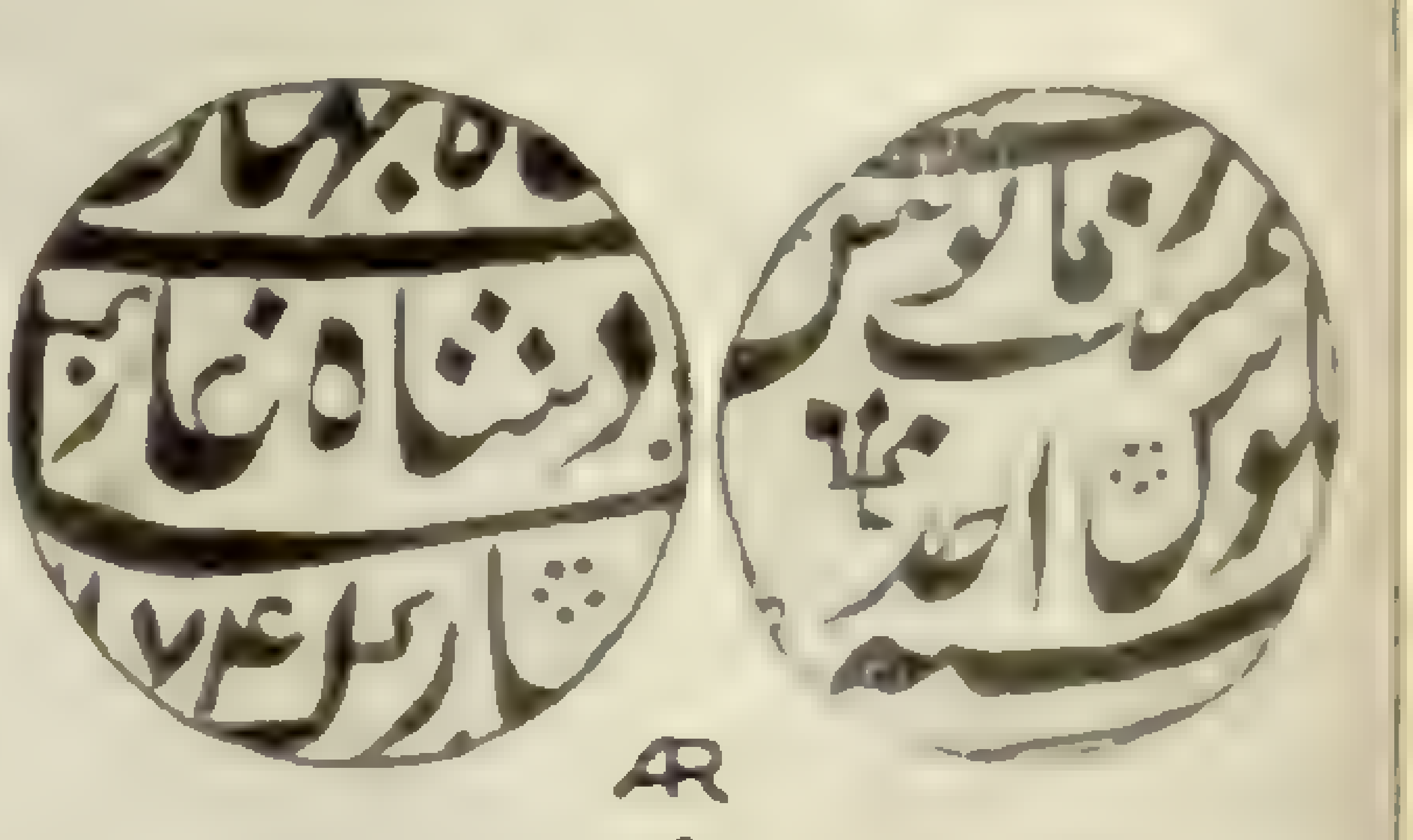

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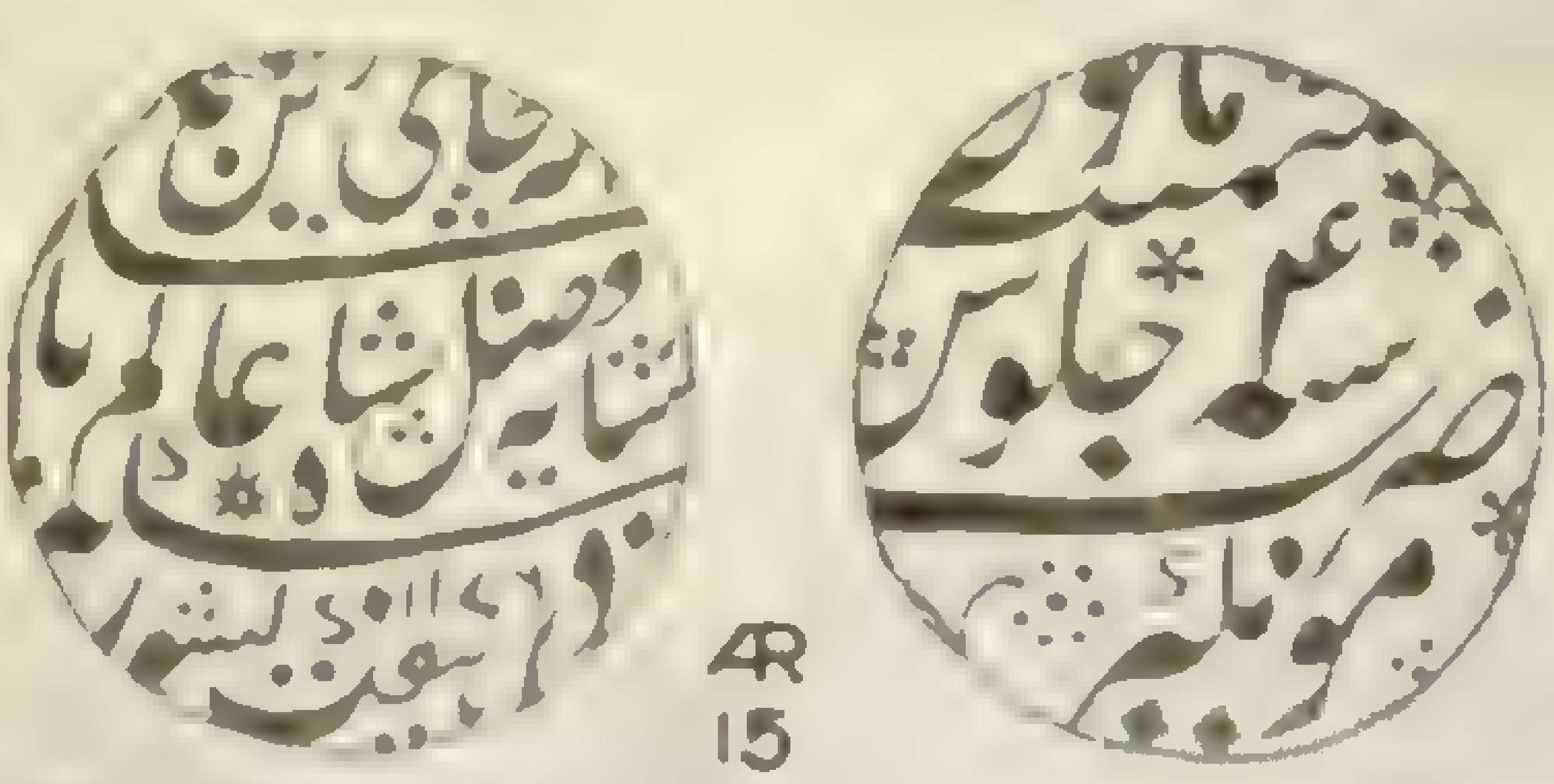

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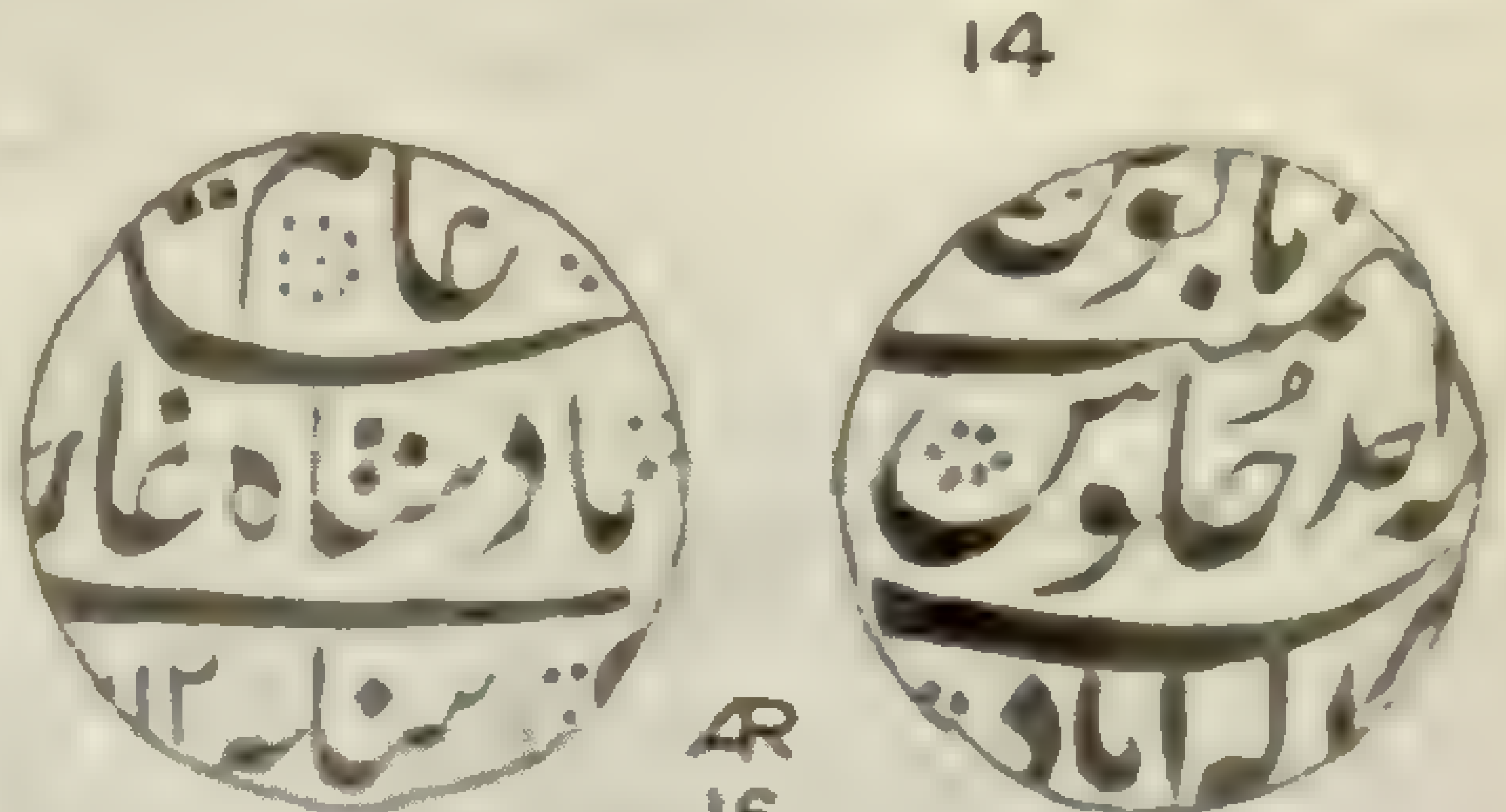

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14. NUMISMATIC SUPPLEMENT V.

(With Plates IV & V.)

NOTE.—*The numeration of these articles is continued from p.* **116** *of the Journal for* **1904.** (*Extra number.*)

III.

SULTANS OF DEHLI.

31. *Muḥammad bin Tug͟hlaq*, Pl. IV. 1.

A new variety of Muḥammad bin Tug͟hlaq's lighter gold coins has recently been obtained at Agra by Mr. G. Bleazby who has sent it to me for publication. An almost similar coin of the same mint was described by me in the Journal of the Royal Asiatic Society 1900, p. 775. The date of the present coin, however, is different, and Daulatābād is given the title of حضرة instead of دارالملک. The coin is in very fine condition. In my paper above mentioned I suggested that the words in front of the mint name were قبة بن اسلام and not قبة دين اسلام as read by Mr. Thomas or قبة الا سلام as preferred by Mr. Gibbs. I have, however, since had reason to modify this opinion, as I find that on the gold coins of Firoz S͟hāh Ẓafar and Fateḥ K͟hān the form of the two first letters of the words الامام is identical with that of the same letters in الا سلام on the margin of this coin. I have therefore adopted Mr. Gibb's reading.

AV
Weight, 143 grains.
Size, ·7.
Mint, Ḥazrat Daulatābād.
Date, 730 A.H.

Obverse.	*Reverse.*
Kalima in circle.	ضرب في زمن
Margin.	العبد الراجي رحمة
هذا السكه في قبة الا سلام اعني	الله محمد بن تغلق
حضرة دولت اباد ٧٣٠	

H. N. WRIGHT.

IV.

MUGHAL EMPERORS.

32. *Jalāl-ud-din Akbar.*

(i) *Metal*, Gold. Pl. IV. 2.
Weight, 168 grains.
Mint, Hājīpūr.
Date, 983 A.H.

This unique mohur was acquired from a Hindu priest shortly after the last Magh Mela at Allahābād, to which it is said to have been brought by a pilgrim from Bengal. No coins from the Hājīpūr Mint were previously known. The place is situated in the Muzaffarpūr District, Bengal, and lies on the east bank of the Little Gundak, a short distance above its confluence with the Ganges opposite Patna. Hājīpūr figures conspicuously in the history of the struggles between Akbar and his rebellious Afghān governors of Bengal, having been twice besieged and captured by the Imperial troops in 1572 and again in 1574 A. D. This mohur was struck in 1575, when apparently order was again restored. It is in fine condition and of the type of the mohur illustrated as Figure 65, Plate III. of the British Museum catalogue of Coins of the Mughal Emperors.

(ii) *Metal*, Gold. Pl. IV. 3.
Weight, 167 grains.
Mint, Jaunpūr.
Date, 988 A.H.

This is, I believe, the only *square* mohur of Akbar known from the Jaunpūr Mint. His square rupees from the same mint are extremely rare. The date on this mohur appears in the right-hand lower corner of the obverse—a comparatively rare occurrence.

(iii) *Metal*, Silver. Pl. IV. 4.
Weight, (looped.)
Mint, Jaunpūr-Chaitaur.
Date, 976 A.H

This strange combination of names has long been a puzzle to me, which I have not yet succeeded in solving. There seems no doubt about the reading, and the coin is certainly genuine. It is of the usual type of Akbar's broad rupees from the Jaunpūr Mint (No. 96. Plate IV of the B.M. Catalogue), but with this difference that, while the name Jaunpūr appears in the usual place in the lower margin of the reverse, the word Chaitaur occurs in the upper margin on the same side of the coin. Hitherto only copper coins of Akbar were known from the Chaitaur Mint and none with two mint names. Silver coins of Sher Shāh are known from the Jahānpanāh-Ujjain Mint. This coin was acquired in Lāhore some years ago.

(iv) *Metal*, Silver. Pl. IV. 5.
Weight, 44 grains.
Mint, Lāhore.
Date, 987 A.H.

The inscription on one side of this coin reads الله اکبر "Akbar is God" and not the usual اکبر الله "God is great." A four-anna piece with a similar legend was published by Dr. L. White King and Captain Vost in 1896 in the paper already referred to, but although it bore the same year, it was from the Ahmadābād Mint.

It has been stated by some writers, among them the late Mr. C. J. Rodgers, that in the thirtieth year of his reign, when Akbar founded a new religion, he changed the legends on his coins, his object apparently being that he should be looked upon and worshipped as God; and coins of the kind described above have been quoted as strengthening the assertion regarding the object he had in view. But, so far at least as these pieces are concerned, is it not more reasonable to suppose that the transposition of the words was due to a mistake in the dies which was almost immediately rectified, for if Akbar really intended to assume divine honours and to proclaim himself as God, surely these coins instead of being of the greatest degree of rarity, would be abundant even now, and the inscription would also have been found on coins of the higher denominations instead of being confined to four-anna bits?

(v) *Metal*, Silver. Pl. IV. 6.
Weight, 177 grains.
Mint, Lahore.
Date, 997 A.H.

The rupee is apparently unique, or at any rate extremely rare, by reason of the mint name appearing in the upper margin of the reverse. On this side, the name and titles of the king are given in a square with loops at the four scorners. The Kalima, with the usual accompaniment, appears on the obverse in a quadrilateral area with three curves in each side.

(vi) *Metal*, Silver.
Weight, 176 grains.
Mint, Urdū Zafar Qarīn.
Date, Alif = 1000 A.H.

This rupee, which is precisely similar to the mohur portrayed as Figure 79, Plate III, of the B.M. Catalogue, is probably unique. It is the only round rupee of Akbar discovered so far from the camp mint and of the year (1000) *alif*. It was acquired in Amritsar some years ago.

(vii) *Metal*, Silver.
Weight, 175 grains.
Mint, Ahmadnagar.
Date, 4-Ilāhī.

This rare coin is of rude fabric, and, in this respect, much resembles the rupees of Akbar from the Bairāt Mint. The legend on the reverse is—

ماه شهریور الهی
۴ احمد نکر
ضرب

The obverse has the inscription usual on Ilāhī rupees.

Geo. B. Bleazby.

33. *A Zodiacal Half-rupee.* Pl. V. 1.

A few days ago I came across in the Aḥmadābād bazar a zodiacal Leo half-rupee [Legend, normal: Date, Hijrī year wanting, regnal year 13; Mint, Aḥmadābād]. If this be, as it seems to me to be, a genuine specimen, it furnishes evidence, hitherto wanting, of the existence of zodiacal coins of that denomination. Imitation half-rupees, indeed, bearing representations of the signs of the Zodiac, are well known (See Br. Mus. Catal. Nos. 386-401), and these themselves, *quâ* imitations, may fairly be taken as proof more or less substantial of the currency of the original coins they counterfeit. Had there been no genuine half-rupees, it is hard to see why the so-called "imitations" should ever have been fabricated.

Beside the recently-discovered half-rupee, three full rupees of Leo type lie before me on the table at which I am now writing. Two of the three were evidently struck from one and the same die, but the third not less evidently from a die slightly different. On the two, for instance, the word زیور is written as ریور with no superscribed dot over the "ze" (Pl. V. 2), but on the third as زىور with no subscribed dots under the "ye" (Pl. V. 3). Also on the duplicates after the word شاه of Jahāngīr Shāh comes a small curved flourish distinctly to the left of the "hā"; but on the third we have a longer sprawl, not to the left at all, but directly above the "hā." The two are evidently indentical with the coin No. 385 figured on Plate XI of the Br. Mus. Catal., and there styled an "imitation rupee." If these be imitations, then the third (of the زىور type) is certainly genuine, and it is with this third specimen that the half-rupee agrees in every particular.

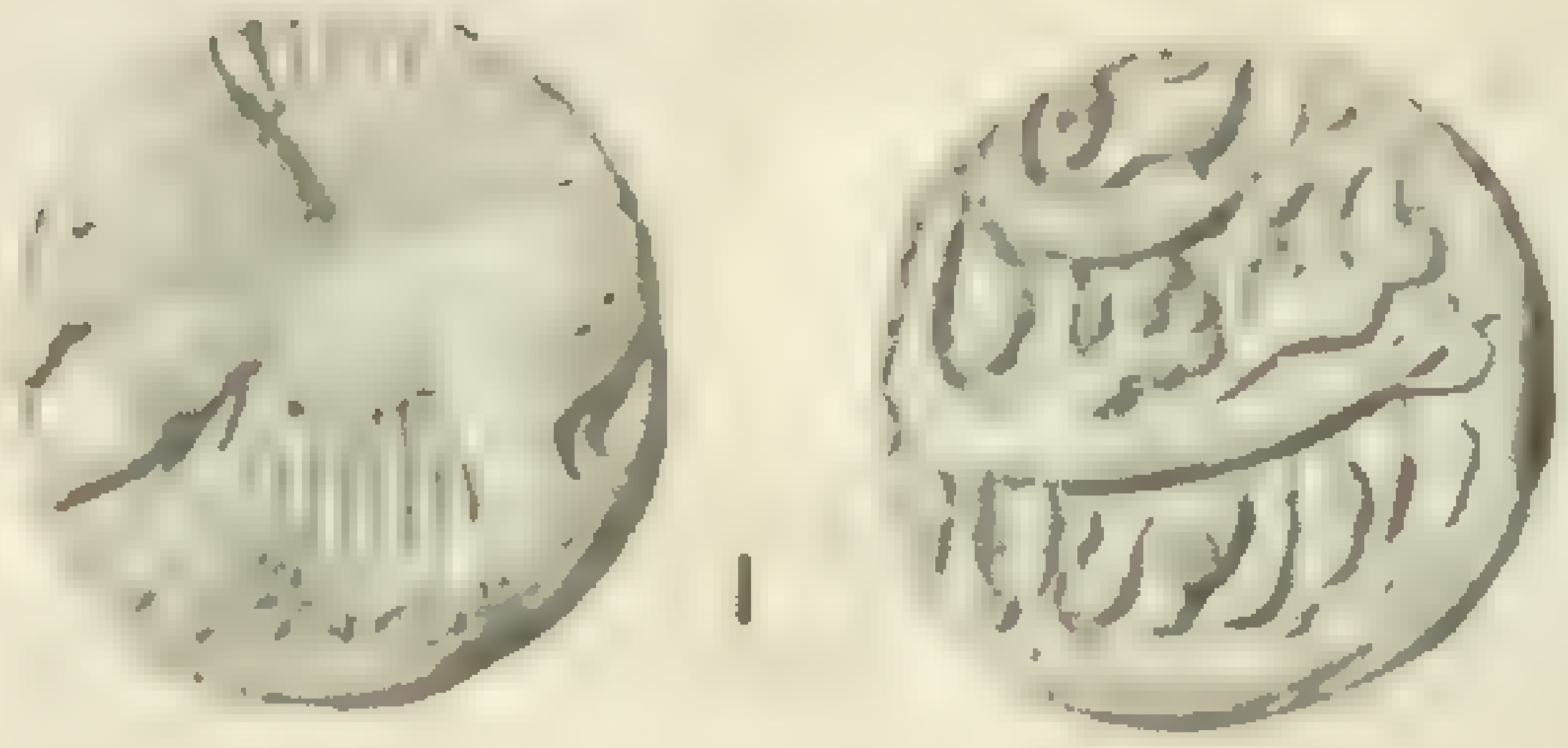
But, indeed, on what ground the Br. Mus. rupee No. 385 is adjudged to be an imitation I fail to apprehend. A complete statement of the differentiæ that serve to discriminate between a genuine Zodiacal muhr or rupee and the beautifully-executed "imitations," a statement more detailed, and thus more practically helpful, than the paragraph on pp. LXXXIII, f. of the Br. Mus. Catal., would, I feel sure, be very acceptable to the collectors of the coins of this fascinating series.

Geo. P. Taylor.

Aḥmadābād.

Note.—I take the opportunity to figure yet a third variety in which the word زیور is written without any dots (Pl. V. 4.) All three types appear to be equally genuine. I note also that on the two specimens of the "Cancer" rupee in my cabinet, the reverse legend of which is similar to that on the "Leo" rupee above mentioned, the word زیور also appears without dots.

H. N. Wright.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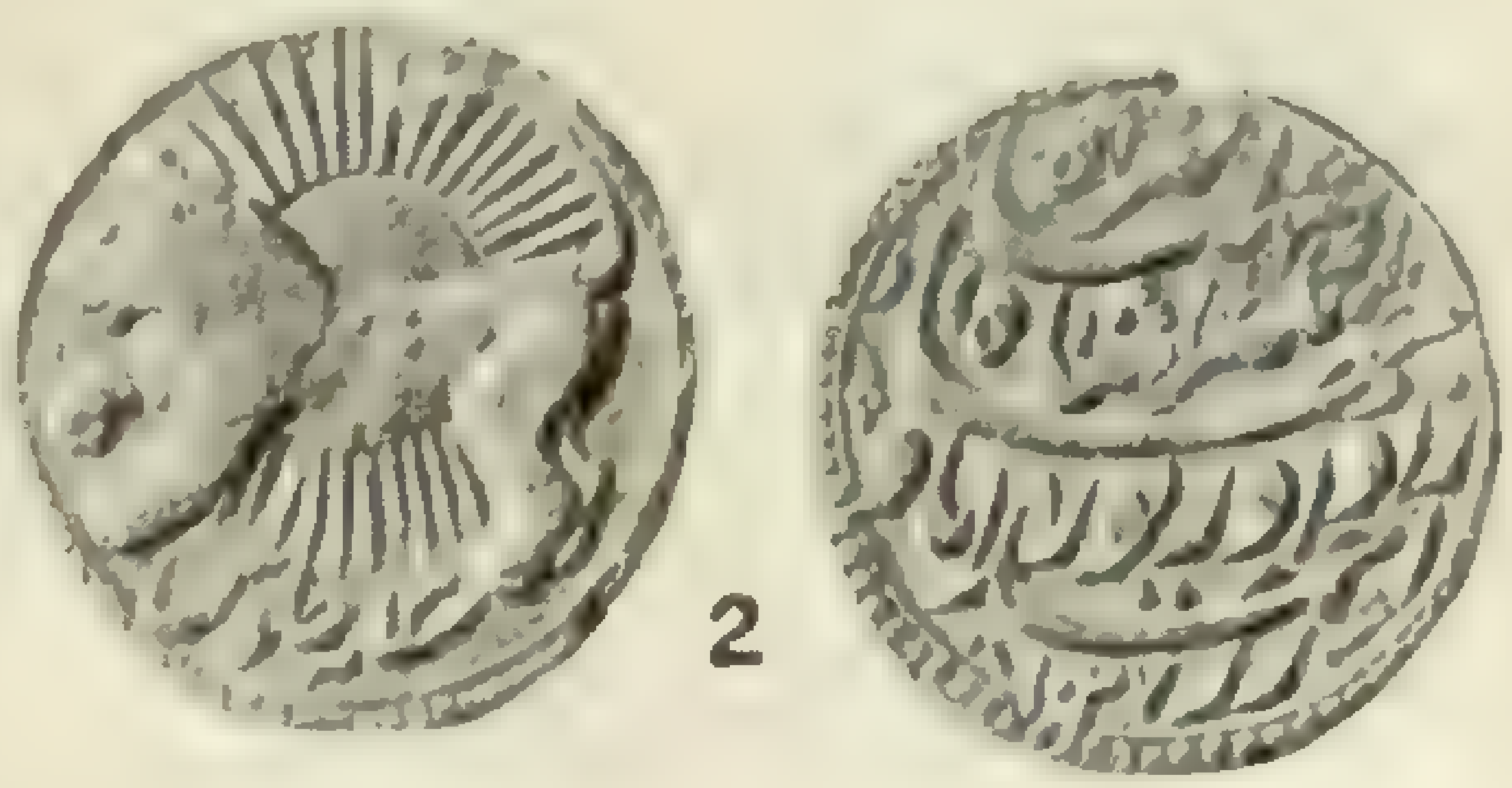
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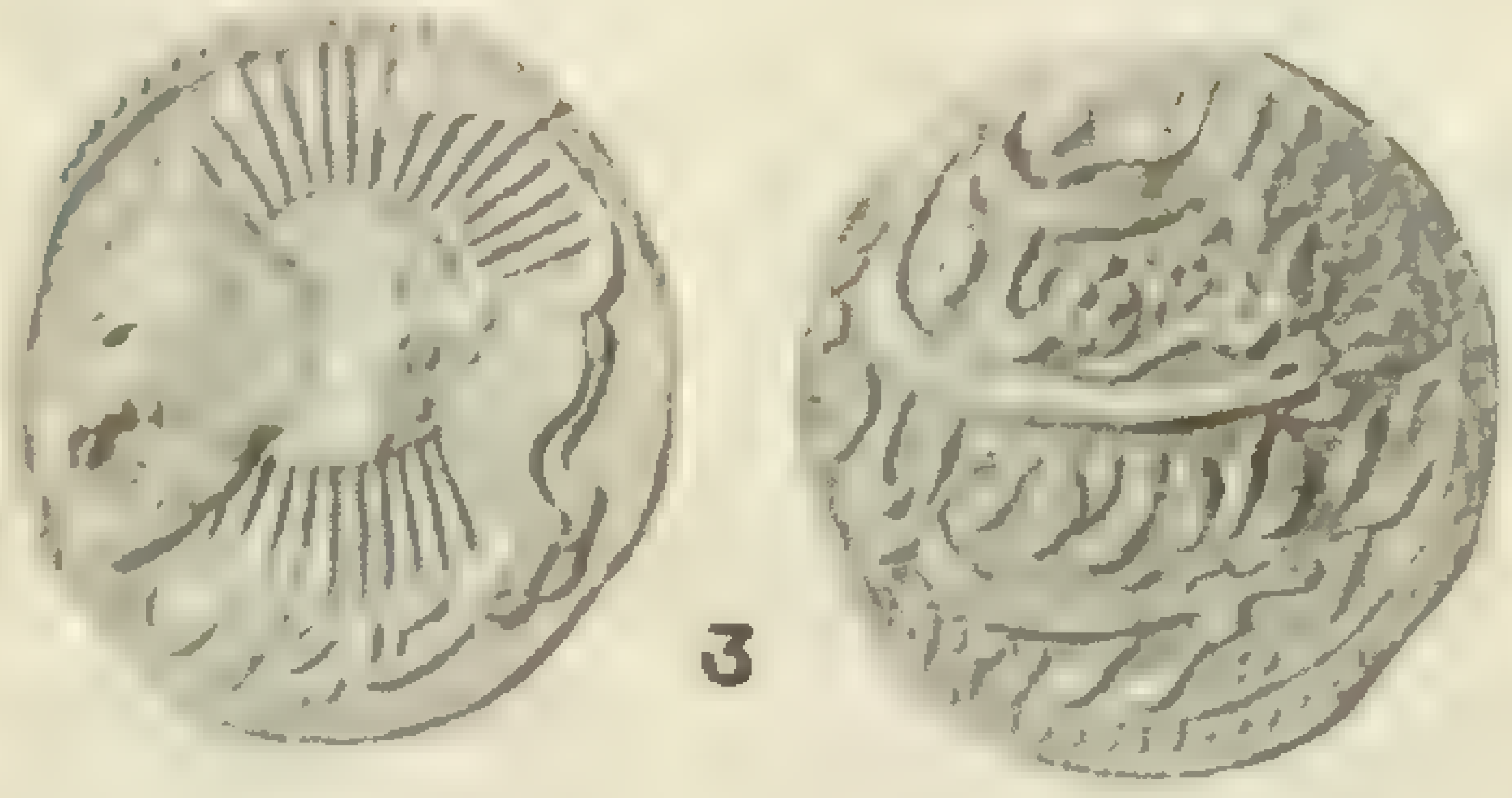
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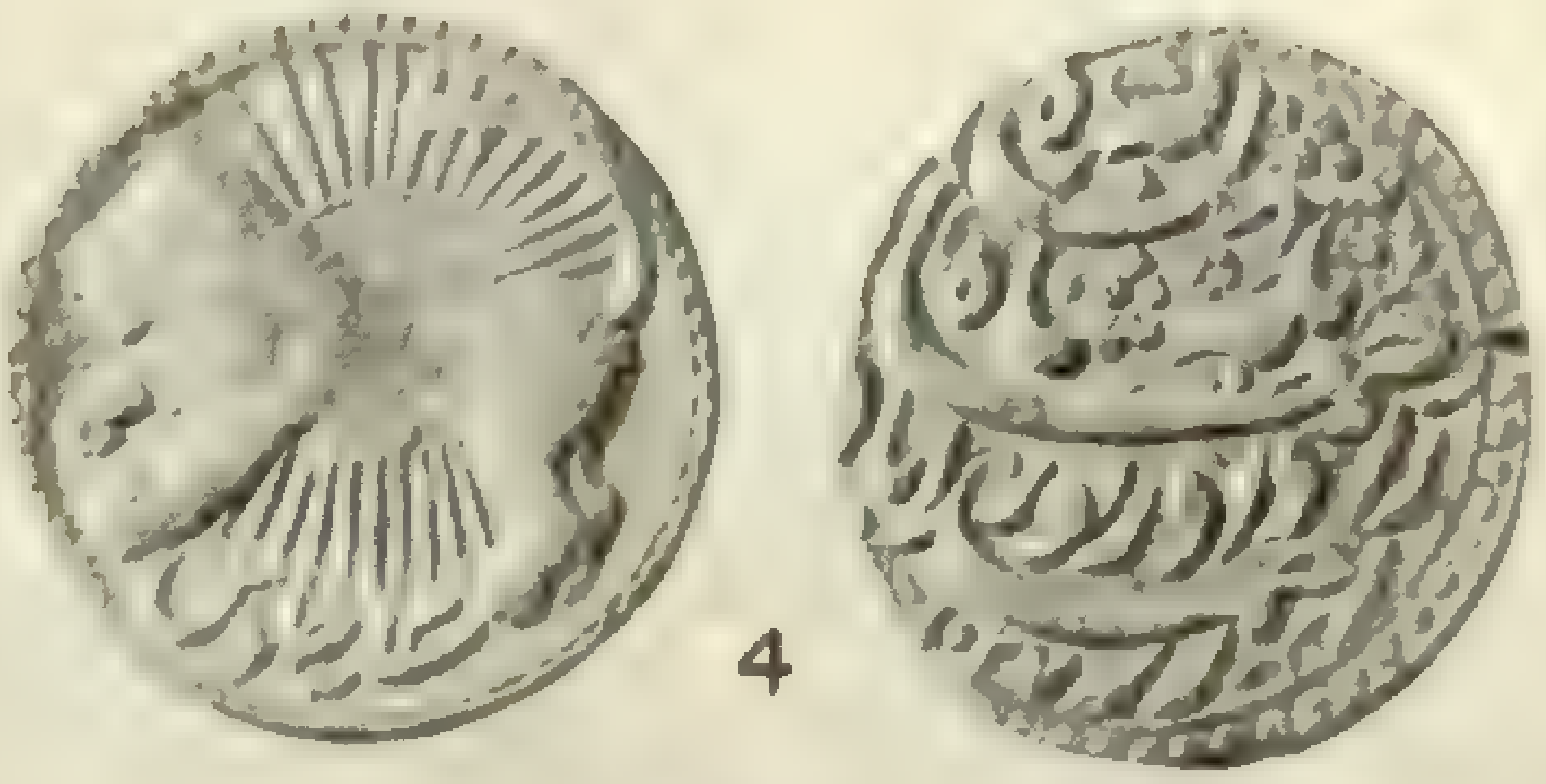
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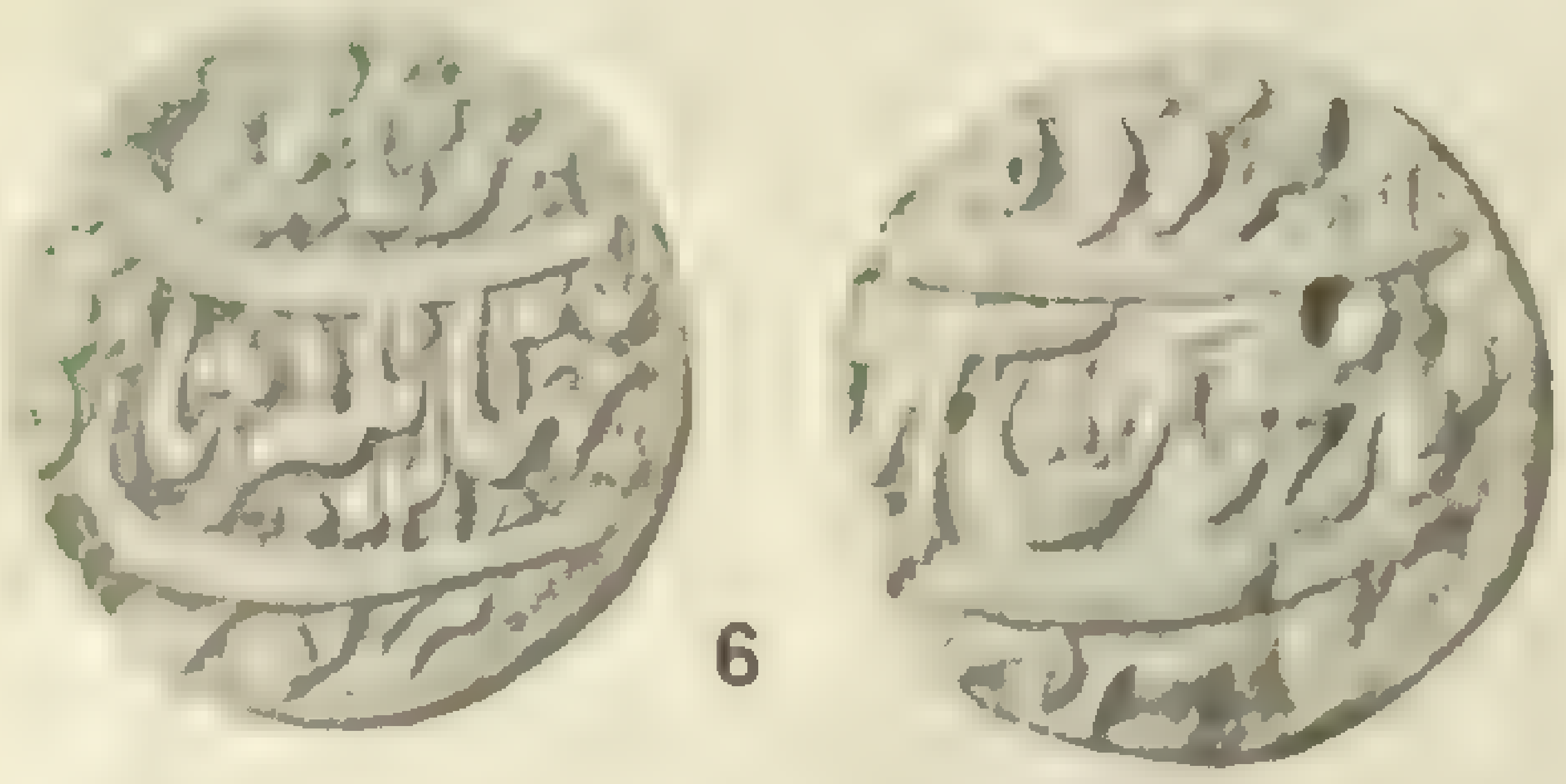
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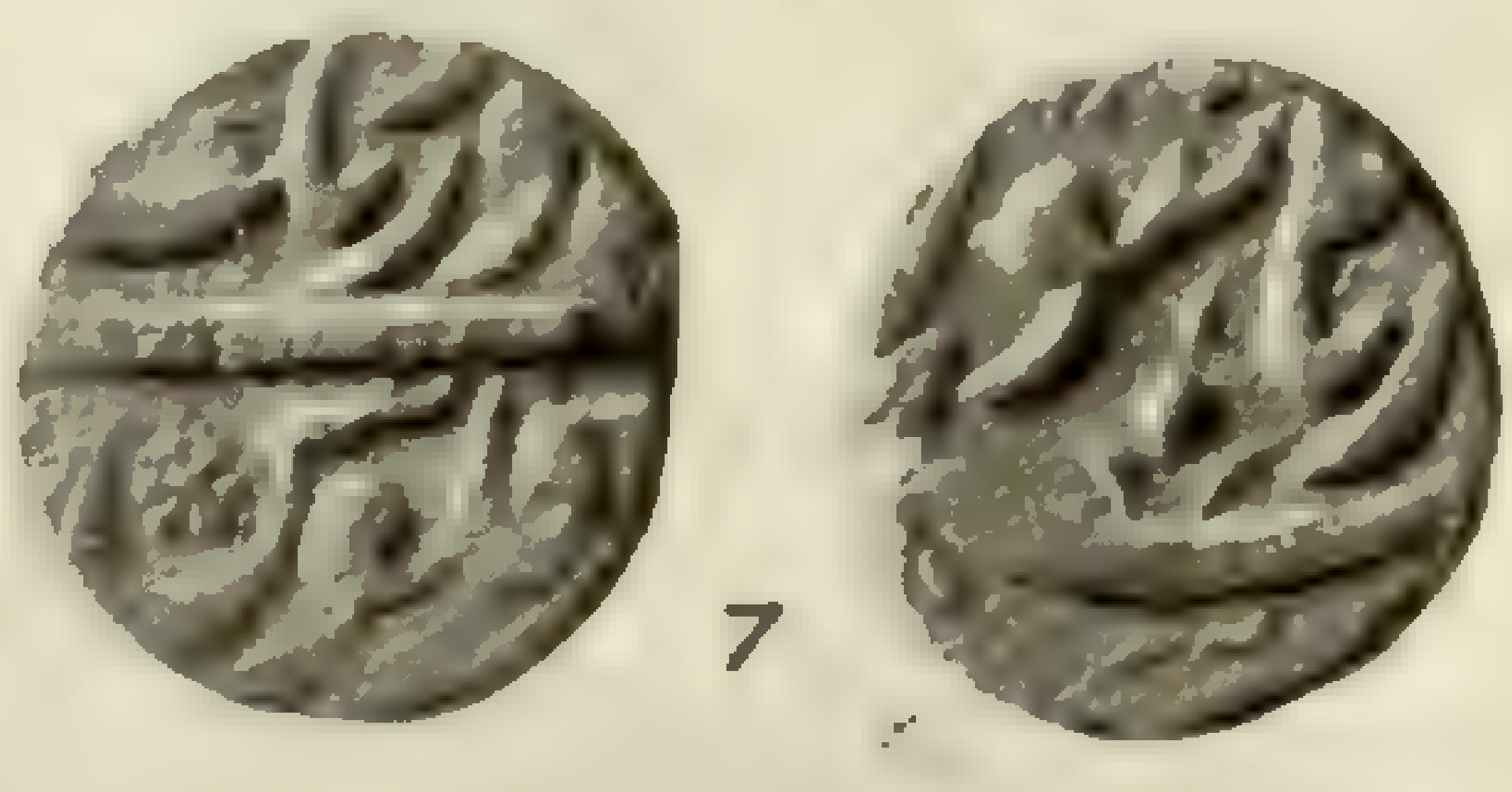
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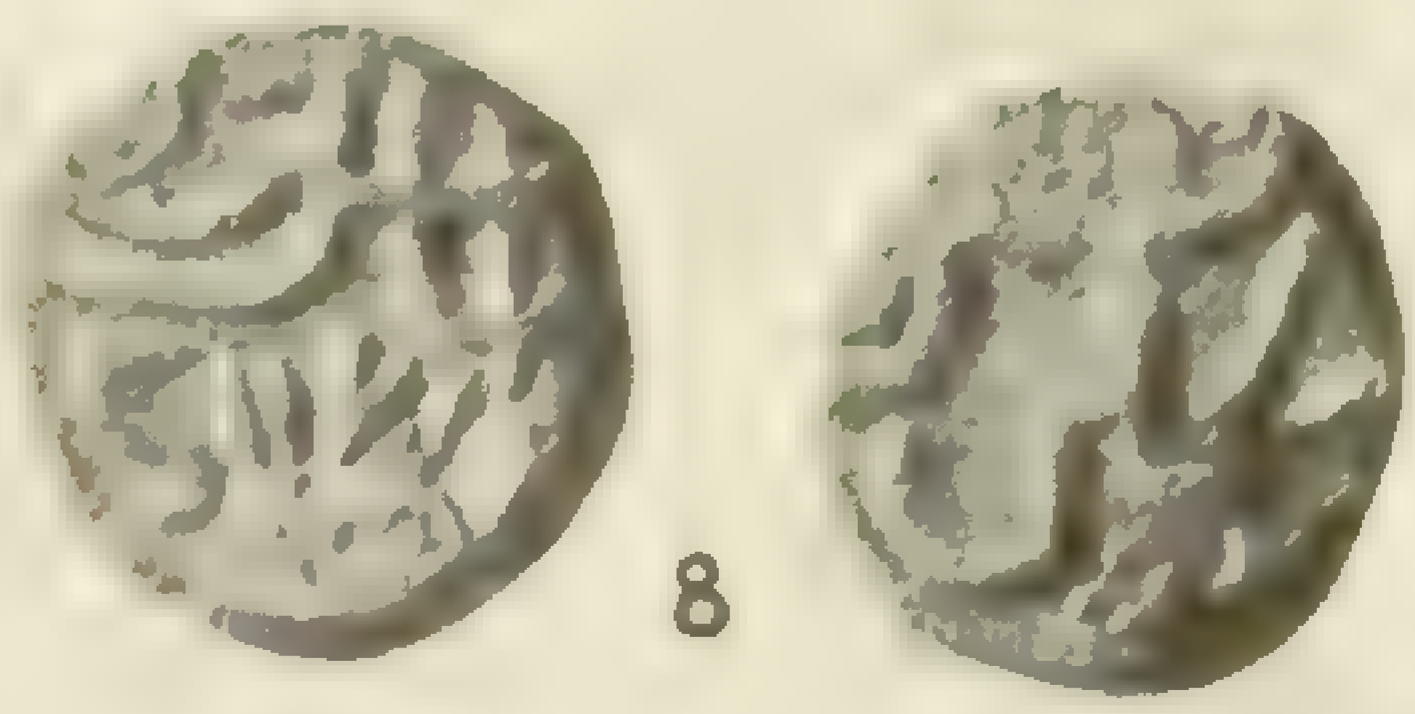
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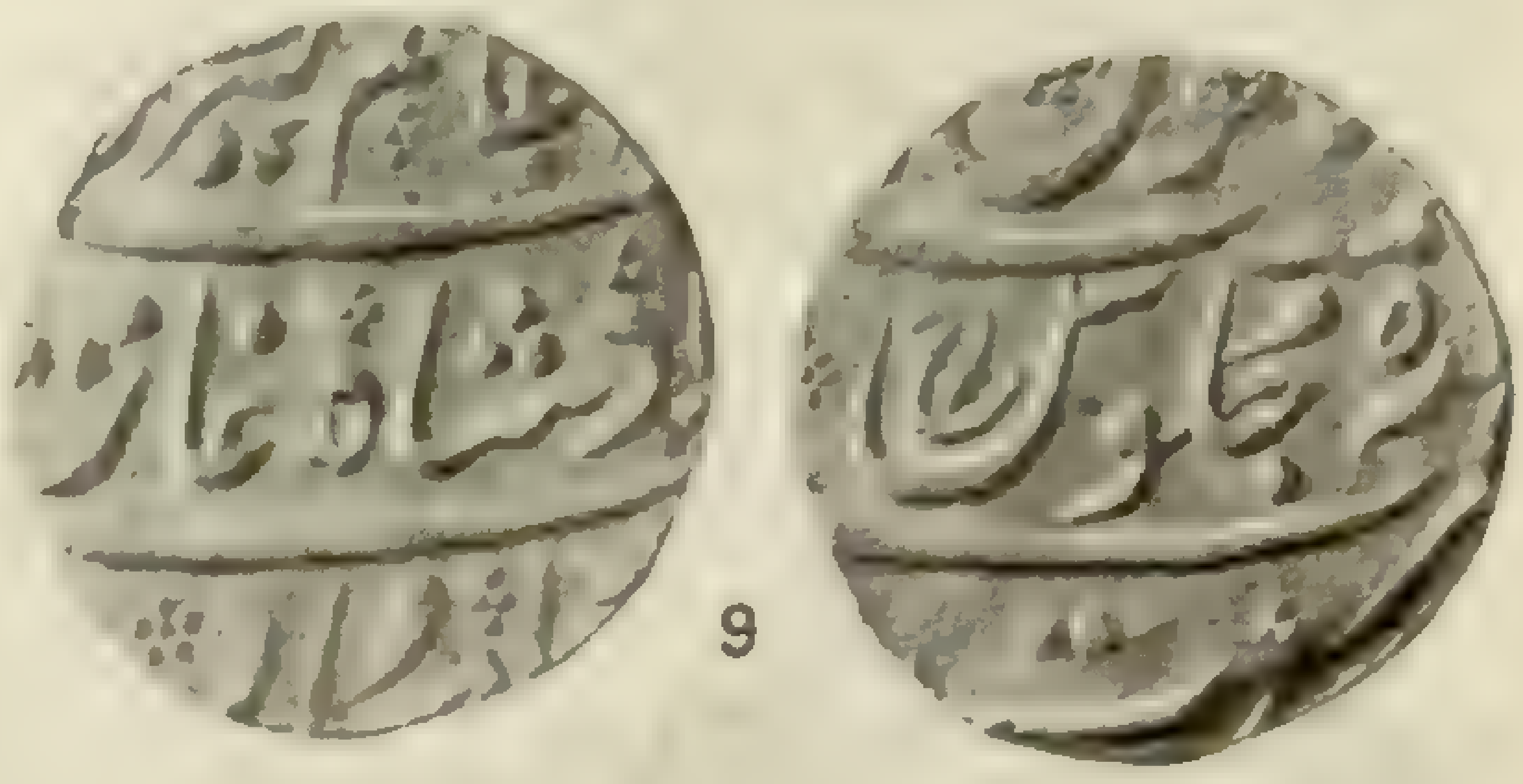
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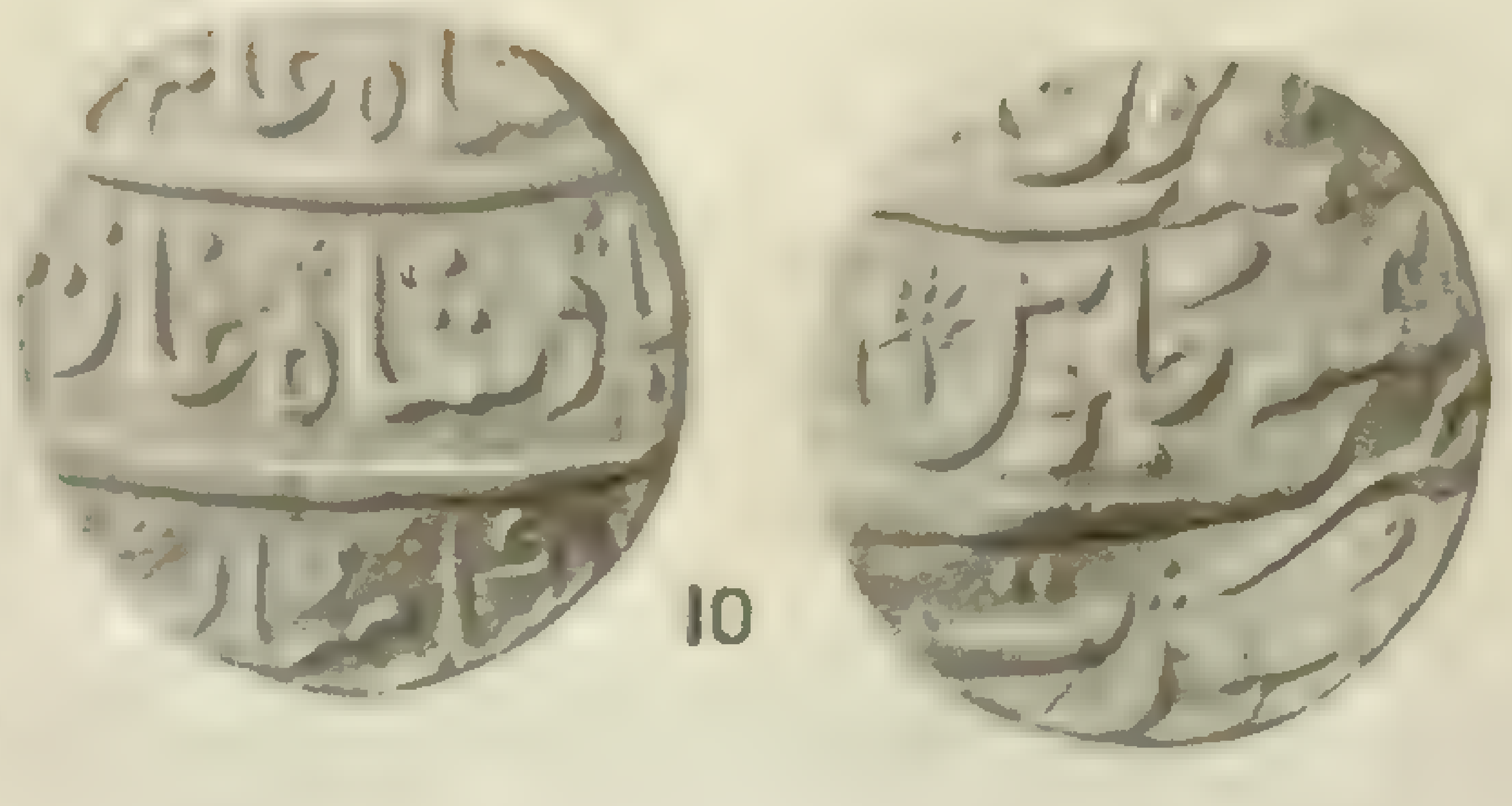
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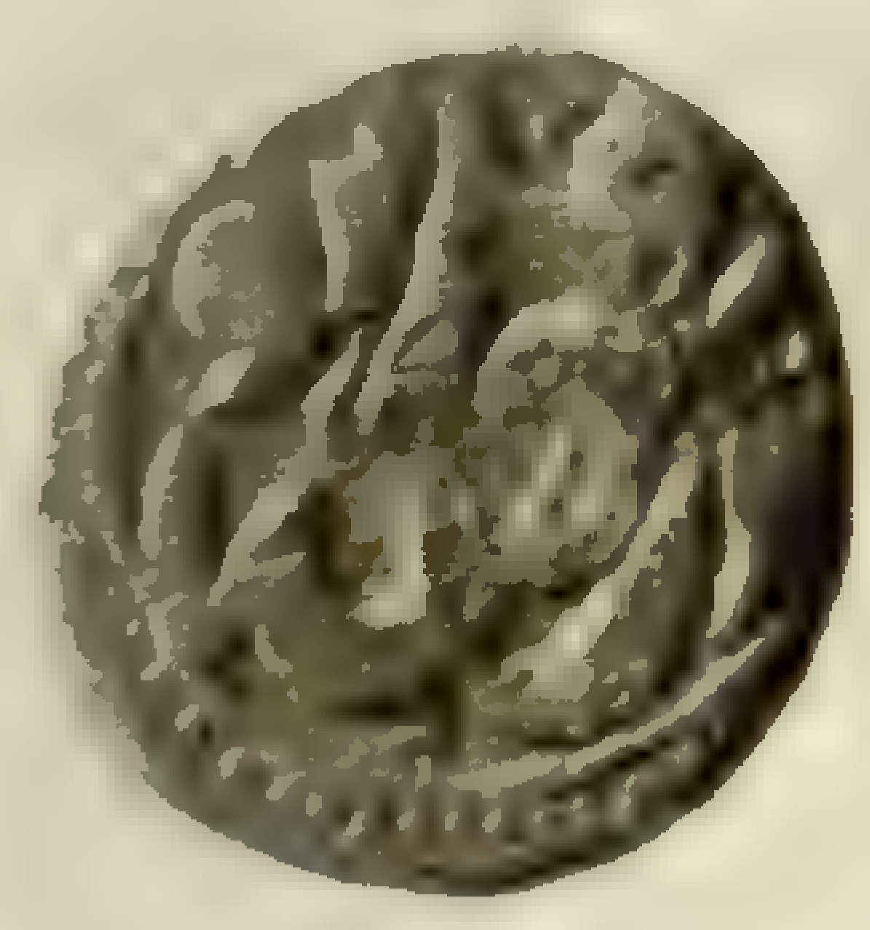
5

34. *Some rare Mughal Coins.*

In the hope that the following coins from my collection may be of some interest to numismatists, I beg to offer some short descriptive remarks regarding them :—

(i) *Akbar.* Pl. V. 5.

Æ.
Weight, 306 grains.
Size, ·85.″
Mint, Sironj.

Obverse. In double circle with dots between.

سرونج
فلوس
ضرب

Reverse.

۱۳۸ لهی
ماه مهر

Date, Ilahi 38.
Month, Mihr (7th Persian month).

This is a new Mughal Mint. The coin was obtained in Bombay two years ago.

(ii) *Jahāngīr and Nūr Jahān.* Pl. V. 6.

Æ.
Weight, 176 grains.
Size, ·85.″
Date, 1035-21
Mint, Lāhore

Obverse.

زنام
شـــــاه
جهانگیر[بو]
۲۱ سکه د
بر نور

Reverse.

فزوده
ے‌ـــــــــ
نور جهان زد
بیگـــــم
لاهوره ۳۵ [۱۰]

The legends on both obverse, and reverse of this rupee read downwards—omitting the regnal year 21 and Hijri year (10)35,—form the following couplet :—

Zi Nām-i-Shāh Jahāngīr tā buwad sikka-i-bar nur.
Fazūdah Nūr Jahān Begum ru-i-Lāhor.

(May the coin by the name of King Jahāngīr, remain with light;
And may the face of Lāhore be made by Nūr Jahān Begam bright).

i.e., may this coin which is struck at Lāhore remain for ever shining with lustre, both from King Jahāngir, and his (Queen Consort) Begam Nūr Jahān.

This rare rupee was obtained by me at Aḥmadābād on my short visit to that city on 29th of January last. Rupees of Jahāngīr and Nūr Jahān from the Lāhore mint with legends forming a couplet are known. This is a new couplet altogether* :—

(iii) *Aurangzeb.* Pl. V. 7.

Æ.
Weight, 103 grains.
Size, ·7″
Mint Burhānpūr.

Obverse. زیب
اورنگ [ه]
ے
فلوس [شا]

Reverse. برهانپور
سنه ۹

A new mint of of Aurangzeb in copper, I got it at Burhānpūr some two years ago.

(iv) *A'lamgīr* II. Pl. V. 8.

Æ.
Weight, 105 grains.
Size, ·65.″
Date, 1171—4?
Mint, Machhlipatan.

Obverse. مبارک
جلوس ۱۱۷۱
Reverse. ۴
ضرب
مچهلي پتن

This is a new mint of A'lamgīr II. in copper. The name of the Emperor is not engraved on the coin, but the year helps us in assigning it to him.

FRAMJI J. THANAWALA.

Bombay.

**Note.*—The reading of the interesting coin of Jahāngīr suggested by Mr. Thānawālā, appears capable of improvement.

Owing to the coin being somewhat worn, it is difficult to say with certainty what the couplet is. The following is given as an alternative suggestion.

Obverse. ز نام شاه جهانگیر تا شده پر نور
Reverse. فزوده نور جهان روے سکه لاهور

The words on the reverse read by Mr. Thānawālā as بیگم and زد are, I think, unmistakeably سکه and رو. Similarly, I do not think that the penultimate line of the obverse can be read as سکه د. The second letter is much more like a د than a ک, and it is followed by what is clearly a ه. The rhythm of Mr. Thānawālā's couplet also appears to be defective. Dr. Taylor of Ahmadābād, who has also seen the coin, has suggested that the last three words on the obverse read ابد پر نور. He would make the ه at the end of the penultimate line the last letter of the word شاه in the second line. It is true the ه of شاه is not visible elsewhere on the coin but the coin is very much worn to the left of شا where one would expect to find the letter ه. Also there is no "*alif*" on the coin, and as far as I can see no room for any.

H. N. Wright.

35. *Dāwar Bakhsh.* Pl. IV. 7.

The coins of this grandson of Jahāngir who occupied the throne of Dehli for three months as a stop-gap for Shāhjahān are so scarce that it is worth while chronicling any finds. A rupee of Lāhore mintage has been described and figured in the Catalogue of the British Museum (Moghul Emperors, No. 527). A second was contained in the collection of the late Pandit Ratan Narāin of Delhi, and the coin described below, which was obtained by me at Meerut in March last, is, I believe, the only other known. All three are identical in legend. No gold coins of Dāwar Bakhsh have apparently come to light yet, but doubtless some were struck.

AR
Weight 172 grains.
Size, ·85.
Mint, Lāhore.
Date, 1037 A.H. Ahd.

Obverse.	*Reverse.*
الله	بادشاه
لا اله الا	بخش
۱۰۳۷ محمد———د	داور
رسول الله	المظفر
ضرب	ابو سنة احد
لاهور	

The coin, but for three shroff marks on one side and four on the other, is in very good condition.

H. N. Wright.

36. *Two rare coins of Shāhjahān and Aurangzeb.*

Among 246 silver coins recently acquired as treasure-trove in the district of Bhandāra C.P., and sent to me for examination, two are of sufficient rarity to warrant special notice. One is a coin of S͟hāhjahān of Katak mint but of a new type; the second of Aurangzeb, struck at the Town of Allahābād. This latter is, I believe, one of two known, the other having been presented to me some years ago by my friend Dr. G. P. Taylor of Ahmadābād. It has not, however, been previously described.

(i) ***S͟hāhjahān.*** Pl. IV. 8.

Æ
Weight, **173 grains.**
Size, ·9.
Mint, Katak (Cuttack).
Date, 3rd regnal year. Month Abān.

Obverse.	*Reverse.*
لا اله الا الله	غازی
محمد	جهان بادشاه ∴
رسول الله	٣
ابا نماه الهی	محمد صاحبقران ثانی
ضرب کتک	شهاب الدین

(ii) *Aurangzeb.* Pl. IV. 9.

Æ
Weight, **174 grains.**
Size, ·9.
Mint, Town of Allahābād.
Date, 1072. A.H. 4th regnal year.

Obverse.	*Reverse.*
Usual couplet but	بلدة اله آباد
مهر *vice* بدر	ضرب
date to left of	جلوس میمنت مانوس
lower line.	سنة ٤

H. N. Wright.

37. *Note on Kām Bakhsh and Bahādur Shāh.*

I notice on p. 241 of the Journal, Vol. LXXII, Part I, for 1904, a statement by Mr. H. N. Wright that "Kām Bakhsh was made Governor of the Ṣūbahs of Bijāpur and Ḥaidarābād by his brother, Shāh 'Ālam Bahādur" [should be S.'Ā., Bahādur *Shāh*]. I do not think that such an error,[1] coming from a leading numismatist, should be allowed to pass without a protest. The mere fact that Kām Bakhsh issued coin in his own name suffices to show that he claimed sovereignty.

Kām Bakhsh never held his authority from Bahādur Shah; he was either an independent sovereign, as his father intended, or a rival who had usurped part of Bahādur Shah's kingdom. By his alleged will 'Ālamgir attempted to make a partition of the country between his three surviving sons; and it was in pursuance of this design, no doubt, that on the 14th Zū,l Qa'dah 1118 H. (17th February, 1707 N.S.), he nominated Kām Bakhsh to be Governor of Bijāpur and Ḥaidarābād. Kām Bakhsh started from the court at Aḥmadnagar at once to take up his appointment. 'Alamgir died on the 2nd March, 1707 (N.S.)

The exact words used in the will, as translated by James Frazer "Nadir Shāh," p. 36, are: "Whoever of my fortunate children "shall chance to rule the empire, let him not molest Mahommed "Kām Bakhsh, should he rest content with the Two New Ṣūbāhs." The text from which James Frazer translated was, apparently, that now in the Bodleian Library, *see* Sachau and Ethe's "Catalogue of Persian MSS." No. 1923 (Frazer MSS. No. 118) fol. 13a.

After doubting for a long time, I have at last come to look on this will as authentic. Khāfi Khan, II, 549, says it was made over to Ḥamīd-ud-dīn Khān, a confidential servant in the Emperor's entourage; Kāmwar Khan states that 'Ālamgīr kept it, after signature, under his pillow. Immediately after 'Ālamgīr's death, its provisions were appealed to by Bahādur Shāh when writing early in June, 1707 to his brother A'ẓam Shāh, then advancing on Āgrah to contest the succession; and a copy had reached Sūrat as early as the 18th October, 1707, as may be seen from F. Valentyn, Oude en Nieun ost Indie," IV, 274. The probabilities are in favour of the document having been executed;

---

[1] The statement quoted above was based on the following extract from the *Muntakhabu-i-lubāb* (Text Vol. II. p. 605) as translated by Professor Dowson (Elliot's History of India, Vol. VII, p. 405).

"A kind and admonitory letter was addressed by the Emperor (Shāh 'A'lam I) to his brother Prince Muḥammad Kām Bakhsh to the following effect: 'Our father entrusted you with the government of the *Ṣūba* of Bijāpūr; we now relinquish to you the government of the two ṣūbas of Bijāpūr and Ḥaidarābād, with all their subjects and belongings, upon the condition, according to the old rule of the Dakhin, that the coins shall be struck and the *khuṭba* read in our name. The tribute which has hitherto been paid by the Governors of these two provinces we remit.'

H. N. WRIGHT.

and in any case, the dates show that Kām Bakhsh was appointed to, and started to take possession of, Bijāpur before his father's death.

WILLIAM IRVINE.

38. *Aḥmad Shāh Bahādur. A new Mughal mint. Mujāhidābād.*

This coin was obtained by me in Cawnpore two years ago. I have been unable to identify the locality of Mujāhidābād. Aḥmad Shāh at his accession took the title of Mujāhid-ud-dīn (Elliot, VIII., p. 112.).

The mint is entered in Mr. Burn's list of Mughal Mints (J.A.S.B., Pt. I., No. 2, of 1904) but the coin has been nowhere described.

Æ. Pl. IV. 10.
Weight, 165 grains.
Size, ·85.
Mint, Mujāhidābād.
Date, 1163, A.H. 3rd regnal year.

Obverse.	*Reverse.*
Within dotted circle.	Within dotted circle.
احمد شاه بهادر ے	مانوس
ک بادشاه غاز	میمنت
سکه مبار	سنة ۳ جلوس
	ضرب
	مجاهداباد

H. N. WRIGHT.

39. *A find of coins at Manbhūm.*

A large and interesting find, containing 540 coins, from Shāhjahān I to Shāh Alam II was recently made at Ghorati in the Manbhūm district. The find was especially rich in the Bengal and Benāres mintages of the later Mughals, Muḥammad Shāh, Aḥmad Shāh, 'Alamgīr II and Shāh 'Alam II as the following figures will shew :—

	Muḥammad Shāh	Aḥmad Shah	'Alamgīr	Shāh 'Alam II.
Azīmābād ...	39	10	31	5 = 85
Jahāngīrnagar	1	...	7	5 = 13
Katak ...	1	...	...	= 1
Muḥammadābād Benāres	26	33	123	31 = 213
Murshidābād	17	20	31	1 = 69
Mūngīr	...	...	...	2 = 2
				383

Of the Muḥammadābād Benāres Mint there were coins of the 16th regnal year, and of each regnal year from the 18th to the 30th of Muḥammad Shāh, a complete series of the coins of Aḥmad Shāh and 'Ālamgīr II, and coins of the first five years of Shāh 'Ālam II. The latter coins and those of 'Ālamgīr II shew a great variety of types and mint marks. The find also contained a complete series of the rupees of Aẓāmābād for the reigns of Aḥmad Shāh and 'Ālamgir II, except in respect of the 4th year of the former sovereign; and it appears from them that the mint-mark identified with the Aẓīmābād Mint in later times was first placed on the coins in 1163 A.H.—the 3rd year of Aḥmad Shāh. Rupees of Katak of Muḥammad Shāh, of Jahāngīrnagar of Muḥammad Shāh, and 'Ālamgir II, and of Mūngīr of Shāh 'Ālam II have not, as far as I know, been previously found.

The find further contained a rupee of 'Ālamgīr II of Calcutta mintage, a rupee of Shāh Ālam II of Allahābād, with a date which, it seems to me, must be read as 1172 A.H., *i.e.*, two years before he ascended the throne of Dehli; and a rupee of Shāh Jahān III of Aẓimābād, dated 1174 A.H.

The Mūngīr rupee of Shāh 'Ālam II calls for special notice. In Dr. White King and Captain Vost's paper "Some Novelties in Moghul Coins," published in the Numismatic Chronicle, Vol. XVI, a dām of Akbar was described and figured, on which the mint name Mānghīr مانگهیر was read, though no 'ye' is visible in the illustration of the coin. This place was identified with Monghyr in Bengal. The latter, however, is always in Persian characters spelt مونگیر, and this is the spelling found on the coin of Shāh 'Ālam II in the Manbhūm find. It seems certain, therefore, that the mint town of the copper coin of Akbar above mentioned cannot have been Monghyr in Bengal. It is more probable that it was "Mānghar," a fort built by Islām Shāh Sūri, 76 miles north of Amritsar (see Thomas's Chronicles, page 414). This would account for the Sūrī type of the reverse.

The Allahābād rupee of Shah 'Ālam II, dated 1172 A.H., is puzzling. It is, I understand, not the first found, but I have myself seen no other. In Elliot and Dawson's History of India, Vol. VIII, page 172, it is stated that in the 5th year of 'Ālamgīr's reign, which would correspond to 1172-73 A.H., Shāh 'Ālam left Dehli after fighting a battle with Ghāzī-ud-din Khān and proceeded eastward. He was joined by the Governor of Allahābād, and proceeded to invade Bengal, with a view to "establishing his claim to the viceroyalty of the eastern Sūbahs" (Br. Mus. Cat., page 12). After his defeat at Buxar and the signing of the Treaty of Allahābād in 1765 A.D. (1178-79 A.H.) the latter place became the headquarters of Shāh 'Ālam for some years.

(i) *Muḥammad Shāh.* Pl. IV. 11.

Æ.

***Weight*, 179 grains.**

Size, ·9.
Mint, Katak.
Date, 1154—24th regnal year.

Obverse. ۱۱۵۴ محمد شاه بادشاه غازي سکه مبارک

Reverse. سنة ۲۴ جلوس میمنت مانوس ضرب کتک

(ii) *'Ālamgir Shāh II.* Pl. IV. 12.

Æ.
Weight, 179 grains.
Size ·9
Mint, Jahāngīrnagar.
Date 117—6th regnal year.

Obverse. ۱۱۷ عالمگیر بادشاه غازي سکه مبارک

Reverse. سنة ۶ جلوس میمنت مانوس ضرب جهانگیر نگر

(iii) *'Ālamgir Shāh II.* Pl. IV. 13.

Æ.
Weight, 179 grains.
Size, 1″.
Mint, Calcutta.
Date, 1172—5th regnal year.

Obverse. عالم گیر بادشاه غازي سکه مبارک ۱۱۷۲

Reverse. سنه ۵ جلوس میمنت مانوس ضرب کلکته

Mint mark:

On obverse—"Sun,"
On reverse—"Cinquefoil" (traces of).

(iv) *Shāhjahān III.* Pl. IV. 14.

Æ.
Weight, 179 grains.
Size, ·9.
Mint, Azīmābād.
Date, 1174—Ahd.

Obverse. شاه جهان بادشاه غازي سکه مبارک ۱۱۷۴

Reverse. ضرب عظیم اباد سنه احد جلوس میمنت مانوس

(v) *Shāh 'Ālam II.* Pl. IV. 15.

Æ.
Weight, 180 grains.
Size, ·95.
Mint, Mūngīr (Monghyr).
Date, 1176—4th regnal year.

Obv.	*Rev.*
	مانوس
حامي دين محمد سايۂ فضل اله	* میمنت
سکۂ زد بر هفت کشور شاه عالم بادشاه	سنۂ ۴ جلوس
۱۱۷۶	ضرب
	مونگیر

(vi) *Shāh 'Ālam II.* Pl. IV. 16.

Æ.
Weight, 179 grains.
Size, ·9.
Mint, Allahābād.
Date, 1172 (?)—Ahd.
Obverse. شاه عالم بادشاه غازي سکۂ مبارک ۱۱۷۲
Reverse. سنۂ احد جلوس میمنت مانوس ضرب الهاباد

H. N. Wright.

40. *Two double rupees of Sūrat Mint.*

Mr. R. F. Malabārwālā, of Bombay, has sent me for publication a double rupee of the Sūrat Mint struck in the name of Alamgir II. The Hijra date is unfortunately wanting, but the regnal year on the reverse fixes it as 1176 or 1177. Below is a description of the coin. As far as I know, the only other double rupee known is the one in the cabinet of Dr. G. P. Taylor of Aḥmadābād, which he has kindly permitted me to describe in this note.

Rupees of the type of the Sūrat rupee of the Moghul Emperors were coined by the Bombay Mint. Mr. Thurston in his History of the East India Company's Coinage says (page 43): "The Nawāb's rupees, however, were soon found to contain 10, 12 or even 15 per cent. of alloy, in consequence of which the Bombay rupees were melted down and recoined at Sūrat. The coinage of silver in the Bombay Mint was suspended for twenty years, and the Sūratis alone were seen in circulation. At length in 1800 (1214 A.H.) the Company ordered the then Sūrat rupee to be struck at Bombay." As both the present rupees were issued before 1780 A.D. (1194 A.H.) it cannot be definitely stated whether they were struck by the Mughal Emperors whose names they bear or issued from the Bombay Mint.

(i) (G. P. T.) Pl. V. 9.

Æ.
Weight, 349 grains.
Size, 1·0.
Mint, Sūrat.

Date, [1172] 5th regnal year.
M.M., ع in the س of جلوس

Obv.	*Rev.*
عالم گیر ے ک بادشاه غاز سکه مبار	مانوس میمنت سنة ٥ جلوس ضرب سورت

(ii) (R. F. M.) Pl. IV. 10.

Æ.
Weight, 350 grains.
Size 1·0.
Mint, Sūrat.
Date, [1176] 4th regnal year.
M.M., seven petalled flower in the س of جلوس

Obv.	*Rev.*
شاه عالم ے ک بادشاه غاز سکه مبار	مانوس ٤ میمنت سنة جلوس ضرب سورت

H. N. Wright.

41. “*Mumbai-Sūrat*” (ممبی سورت) or “*Mahīsūr* (مہي سور) *which ?*

Grave doubt should, it seems to me, be entertained regarding the existence of the so-called “Mumbai-Surat” Mint. And for the following five reasons:—

1. The only coin attributed to this mint is the *quarter*-rupee registered as No. 80 on page 280 of the British Museum “Catalogue of Indian Coins, Moghul Emperors.”

2. Neither element of this compound-name, “Mumbai-Sūrat,” can be regarded as an adjectival epithet subordinate to the other element. We have here co-ordination pure and simple, produced by the mere juxtaposition of the names of two distinct mint towns. In the long list of the Mughal Mints in India I can recall no other instance of a name built up in this agglutinative fashion.

3. If the legend given in the British Museum Catalogue is true to the original, then amongst contemporary coins this quarter-rupee is exceptional in recording the name of its mint *simpliciter*, without the prefixed term “ḍarb,” ضرب

4. The crescent symbol here present, when found on other coins of this period, is held to be a mint-mark distinctive of the

French Compagnie des Indes. Now, in the 45th regnal year of Shāh 'Ālam II $\frac{\text{A.H. } 1218}{\text{A.D. } 1803\text{-}4}$, the year of the issue of this quarter rupee, France was still a belligerent power, harbouring hostile designs against British India. It is thus well-nigh incredible that any coin struck in that year by the English at either Bombay on Surat, cities remote from the sphere of French influence, should bear this acknowledged symbol of French ascendency.

5. An autotype representation of the quarter-rupee is included in Plate XXXI of the British Museum Catalogue ; but the mint-name as there shown—at least in my copy—does *not* admit of decipherment as Mumbai-Sūrat.

Rejecting for the above reasons the British Museum version, I venture to submit the following as the true rendering of the legend that is contained, so far as the plan admits, on the reverse of this coin :—

مانوس
ميمنت
سنه ں ۴۵ جلوس
ضرب
مهي سور

If this reading be correct, the quarter-rupee was struck at the Mahīsūr (Mysore) Mint. At Mysore the French held a dominant position till the fall of Seringapatam in 1799, and doubtless the crescent on this coin of 1803-4 stands as a survival from that earlier period of power.

A comparison of this quarter-rupee (No. 80) with the Pondicherry and Machhlīpatan rupees (Nos. 128 and 143) reveals the fact that all three are of the same (French) type, bearing not only the crescent symbol, but an identical obverse impression. In all the arrangement of the words of the legend is precisely the same, and the row of diamond-shaped clusters, each of four dots, is a distinctive feature of the field.

The Lāhor Museum Catalogue registers a full rupee of Mahīsūr, dated the 47th year of Shāh 'Ālam II, but unfortunately the description given of this rupee is imperfect. It would be interesting to examine the coin anew, and see whether in type and make it is allied to the "Mumbai-Sūrat" quarter-rupee.

Query :—In the L. M. Catal. Rodgers's brief note reads :—

> "Year ۷۴ (for ۴۷) and mint مهي سور." May this ۷۴ (?=۴۷. . . .) stand for the regnal year "4x" preceded by a rudely formed or misshapen crescent ?*

GEO. P. TAYLOR,
Aḥmadābād.

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* I have ascertained from Lāhor that the reverse of this coin bears the crescent symbol to the left of ۷۴.—H. N. W.

15. *The Emperor Bābar—By* H. BEVERIDGE, I.C.S. (retired.)

As everything relating to Bābar is interesting, I shall here set down a few things about him which are not mentioned in Erskine and Abul Faẓl. The most important is a tradition which is still current in Bābar's native country of Farghāna, and which is recorded in the "History of the Khanate of Khokand (*i.e.*, Farghāna) by Vladimir Petrovitch Nalivkine, a translation of which by Aug. Dozon was published at Paris in 1889. The author, after stating in his preface that the Memoirs of Bābar are nearly unknown in Farghāna or by the Sarts, and that Bābar himself has a bad reputation in that country, says, at p. 63, that when Bābar hurriedly evacuated Samarkand in 918 A.H. (1512 A.D.), after his defeat by the Uzbegs, Saizida Āfāq, one of his wives, who was accompanying him in his flight, was seized by the pangs of child-birth in the desert which extends from Khojand to Kandbadām (east of Khojand and north of Isfava) and gave birth to a son. Bābar dared not tarry, and so the infant was wrapped up and left under some bushes. As a token of whose child he was, and as a reward to the finder, Bābar fastened round the babe his girdle which contained things of price. The child was found by natives of the country, and in allusion to the valuables which were beside him they gave him the name of Altyn Bishik or, "The golden cradle." Afterwards he received three other names *viz.*, Qultuq (the armpit?), Khān Tangriyār (the friend of God), and Khudāyān Sulṭān. It was by the last of these names that he was generally known in after life. Altyn Bishik grew up and spent most of his life at Akshī, one of the capitals of Farghāna. He was a disciple of the famous saint Makhdūm Ā'aẓam who was a native of Kāsān, and whose real name was Aḥmad Khwājagī Kāsānī. Several saints of the name of 'Makhdūm Ā'aẓam are mentioned in Shaw's history of the Khojas, A.S.B.J. Supp. for 1897, but the one referred to in the tradition before us is the Makhdūm Ā'aẓam who was a friend of Bābar and who died in 949 A.H. (1542 A.D. He lived chiefly at Samarkand, and is buried near there, at Dakhbīd. Shortly before his death he came to Akhsī and saw his disciple Altyn Bishik and his son who also had the name of Tangrīyār and was then 5 or 6 years old. Altyn Bishik died in 952 A.H. (1545 A.D.), and his grandson Yār Muḥammad went off to India, to his relations, the descendants of Bābar.

The same tradition is told, with some differences, by Niyāz Muḥammad Khokandī in his Persian work the *Tārīkh-i-Shahrukhī, Pantusov*, Kazan, 1885. With regard to the above tradition, which is probably genuine, it may be noted that an Āfāq Begam, a grand-daughter of Sulṭān Abū Sa'īd and consequently a cousin of Bābar, is mentioned in Gulbadan Begam's Memoirs, translation, p. 204. It is doubtful, however, if she can be the same as Saizida Āfāq. In a Persian MSS. in the Shaw Collection in the Indian Institute, Oxford, there is a reference to Bābar's friendship with Makhdūm Ā'aẓam, for it is stated there that Bābar, after his victory over Rānā Sangā, sent Darvesh Muḥammad Sārbān to the saint with presents, and a quatrain expressive of his respect for dervishes. Perhaps it was on this occasion that Bābar sent to Transoxiana the long religious poem called the Mubayyan, one-half of which has been published by Berezine at Kazan, and of which Sprenger saw a copy at Lucknow. Bābar wrote it in A.H. 928 (A.D. 1521), for the instruction of Humāyūn. At Rampur in Rohilkand there is in the Nawab's Library a small book of Turkī *verses* which, according to a note by Shah Jahān, are in Bābar's handwriting. It seems desirable that they should be edited and published. It is probably the Turkī-divān mentioned by Ḥaidar Mīrzā and Abul Faẓl.

SOME MSS. OF THE BĀBARNĀMA.

There is a good manuscript of 'Abdu-r-raḥīm's translation of the Memoirs in the Pott collection in the Eton College Library. It is No. 175, p. 22, of Professor Margoliouth's Catalogue of the Pott MSS., but is wrongly entered there as a History of Farghāna. The MS. was written in Agra and bears the date of 7 Jamāda-al-awwal, 1051, (4th August, 1641). The MS. formerly belonged to Mr. Richard Johnson, and was bought in Lucknow for ten rupees. In the Bibliotheca Lindesiana, now in the John Rylands' Library, Deansgate, Manchester, there is a thick octavo volume containing 'Abdu-r-raḥīm's translation of the Memoirs. It is a well-written copy (Nast'alīq), but has neither date nor colophon. Probably it belongs to the 17th century. At the end of the account of the translations of the year 908 there is a curious deviation from other manuscripts. Instead of ending abruptly, as in the Shirāzī Bombay Lithographs, p. 75, or in Erskine, p. 122, with the words "Should a man live a hundred, nay, a thousand years, yet at last he must die," it goes on to say that Bābar's friends came up and arranged that he should leave the place, and that his ladies (*Khātūnān-i-ḥaram*) should be taken care of. It looks as if Bābar or some copyist had attempted to round off the description. As is well known, some of the Turkī copies have a much longer narrative in this place. The Bibliotheca Lindesiana also possesses a small fragment of the Turkī Memoirs. There is no date or colophon, but the MS. looks older than 1780, the date assigned by Mr. Kearney, and it has at the end the words *dastkhat* Nūr Muḥammad *ablah* (? ignorant ?) *wa* Abul Faẓl. Possibly this means that the MS. was written or signed by the Nūr Muḥammad who was Abul Faẓl's sister's son. There are also one or two other words which I could not read, but which perhaps give a regnal year.

It is much to be wished that the history of Bābar by Zain Khawāfy entered in Sprenger's Catalogue of the Elliot MSS. J.A.S.B., Vol. XXIII, p. 241, referred to in a note at p. 123 of the *Asiatic Quarterly Review* for July 1900, could be found. It was described as a very old copy and as the property of a friend of Sayyad Jān of Cawnpore. Perhaps it still exists at Cawnpore.

16. CONTRIBUTIONS TO ORIENTAL HERPETOLOGY III.—*Notes on the Oriental Lizards in the Indian Museum, with a List of the Species recorded from British India and Ceylon. Part 2.—By* NELSON ANNANDALE, B.A. (*Oxon.*), D.Sc. (*Edin.*), *Deputy Superintendent of the Indian Museum.*

The present is a continuation of my former paper with the same title, and deals with the remaining families of Oriental Lizards, *viz.*, the Lacertidæ, Scincidæ and Dibamidæ. As before, I append a revised list of the species in the families dealt with which have been, or are here, recorded from British India and Ceylon, with their distribution within these limits. To the epithet 'Oriental' I have given a liberal interpretation, including under the category of Oriental Lizards all those forms which occur on the mainland of Asia or in the western section of the Malay Archipelago, but excluding those only known from New Guinea or Australia.

Dibamus is represented by two specimens, a male and a female, from the Nicobars. They do not call for any comment. As regards the Lacertidæ and Scincidæ, however, the series is a fine one, naturally richest in Indian and Burmese forms—we are rather poor in examples from Ceylon—but including a very considerable number of specimens from Palestine (collected and presented by the late Dr. J. Anderson, F.R.S.), from Persia [1] (mostly obtained by Dr. W. T. Blanford, F.R.S.) and from Eastern Turkestan [2] (with a few exceptions, from the late Dr. F. Stoliczka). There are a few specimens also from Malaya, one or two from Singkip Island off Sumatra and several from Borneo; the last obtained from the Sarawak Museum, while those from Malaya and Singkip were either collected by one of the Museum collectors under the auspices of the late Professor J. Wood-Mason or were donated by the late Dr. Stoliczka. Otherwise the exotic (*i.e.*, extra-Indian) part of the collection is of little importance; it consists of a considerable number of miscellaneous specimens from Australia and the two Americas and a few from Europe and Africa.

LACERTIDÆ.

TACHYDROMUS SEPTENTRIONALIS, Gthr.

T. haughtonianus, *Jerd.*, *P.A.S.B.*, 1870, p. 72; *Stol.*, *J.A.S.B.*, (2), 1872, p. 88.

T. tachydromoides (*part.*), *Blgr.*, *Cat. Liz.* iii., p. 5, and *Faun. Ind.*, *Rept.*, p. 169.

T. septentrionalis, *id.*, *P.Z.S.* 1899, p. 161.

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[1] See Blanford, *Eastern Persia*, Vol. ii., Reptiles.

[2] *Id.*, *Scientific Results of the Second Yarkand Mission*, Reptiles.

The synonomy of the Indian species of *Tachydromus*, like that of many other genera, has been rendered obscure by imperfect descriptions. At least three closely related forms must be recognized as occurring within or near the borders of British India. They are (1) *T. sexlineatus*, Gray, recorded from Assam, Burma, Siam, the Western Himalayas, the Siamese Malay States, S. China, Sumatra, Java, Borneo, etc.; (2) *T. septentrionalis*, Gthr., known from S.-W. China and here recorded from Assam, and (3) *T. tachydromoides* (Schleg.), formerly believed to occur in Assam but probably confined, so far as our knowledge goes, to China, Korea and Japan. A very distinct species, *T. smaragdinus*, Blgr., from the Loo Choo Islands is represented in the Museum by a specimen given by the late Dr. J. Anderson.

T. tachydromoides was apparently included in the Indian fauna by Boulenger because he regarded it as synonymous with *T. haughtonianus*, which was described later. He also regarded *T. septentrionalis*, Gthr., at the time when he wrote his volume in the "Fauna," as identical with Schlegel's species; but more recently he has pointed out that Günther's species is really distinct, though very closely allied to the other. An examination of Jerdon's type in the Indian Museum shows that it is merely a specimen of *T. septentrionalis*, and, therefore, as Boulenger's more recent views seem to be correct, the name *T. tachydromoides* must be crossed out from the list of the Indian Lizards and *T. septentrionalis* inserted in its place.

Apparently the only specimen of *T. haughtonianus* recorded was the type, which I have examined. It is distinguished from specimens of *T. tachydromoides* by the absence of granules between the supraoculars and superciliaries and of a shield between the supraocular and the loreal. From *T. sexlineatus* it differs in having five rows of dorsal scales and a distinctly more elongated head. There is only one femoral pore on each side, but no small scales separate the outer rows of lateral plates. The specimen has four pairs of chin shields developed quite symmetrically—a condition I find also in two young specimens of *T. sexlineatus*, out of twenty-seven, young and adults, of this species examined. The coloration and proportions (except as regards the head) are practically identical with those of *T. sexlineatus.*

LACERTA VIRIDIS (Laur.)

L. viridis *var.* major, *Blgr.*, *Cat. Liz.*, iii, p. 17.

The Museum possesses three specimens from Mount Hermon (*J. Anderson*) of Boulenger's variety *major*. As there is in the British Museum a specimen of the variety (Gray's species) *strigata* from the same locality and collection, the two varieties must occur together. The only specimens of *strigata* in the Indian Museum come from Persia (*W. T. Blanford*) and are immature.

OPHIOPS SCHLEUTERI, Boett.

O. schleuteri, *Blgr.*, *Cat. Liz.*, iii, p. 77.

O. elegans (*part*), *Werner*, *Zool. Jahrbr. Syst.* xix, 1904, p. 334.

Among a large number of specimens of *Ophiops elegans* from Palestine and Asia Minor (*J. Anderson*) six individuals from Mount Hermon have the more numerous body scales and other peculiarities of *O. schleuteri*, Boett., answering very closely to the descriptions of this form, which was at one time believed to be peculiar to Cyprus. The differences between *O. elegans* and *O. schleuteri* are very small but seem to be constant; they can generally be perceived, by mere inspection, without actually counting the scales. Boulenger suggests that Boettiger's species may be only a variety, but it seems best to consider it for the present as a distinct species occurring side by side with *O. elegans*, which, however, has a very much wider range, extending from Turkey to North-West India.

The remaining Lacertids in the collection call for no special mention. Only two species, *Scapteira scripta*, Strauch, (of which we have two Indian examples) and *S. aporosceles*,[1] Alc. & Finn., both from Baluchistan, have been added to the Indian fauna since 1890.

SCINCIDÆ.

MABUIA RUGIFERA (Stol.)

M. rugifera, *Blgr.*, *Faun. Ind.*, *Rept.* p. 190.

A specimen from Perak (*Mus. colltr.*) has seven longitudinal whitish bands on the dorsal and lateral surfaces. The three innermost commence immediately behind the head, the next two on either side at the posterior margin of the orbit. At the posterior extremity of the body they become indistinct, disappearing on the tail. We have also a specimen, in which the colour has faded, from the Nicobars (*Stoliczka*).

MABUIA MULTIFASCIATA, (Kuhl)

M. multifasciata, *Blgr.*, *Faun. Ind.*, *Rept.*, p. 191; *S. Flower*, *P. Z. S.* 1899, p. 646.

The Museum possessess a large series of this common Indo-Malayan skink. The following table shows the number of specimens with tri- and quinquecarinate dorsal scales respectively from different localities Six specimens from Penang and two from Upper Burma have tricarinate dorsal scales :—

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[1] Alcock and Finn, *J.A.S.B.*, 1896 (2), p. 559.

	Total No.	With 3 Keels.	With 5 Keels.	Percentage with 3 Keels.
Assam	13	12	1	92·3
Lower Burma ...	26	24	2	92 3
Andamans ..	14	3	11	21·4
Nicobars .	5	5	0	100
Borneo ...	30	30	0	100

These figures show clearly, though the number of specimens examined is not very great, that while Assamese, Burmese and Bornean specimens agree with those from Malaya (*fide* S. Flower) in being mostly provided with tricarinate dorsal scales, there is a greater tendency among Andaman specimens for these scales to be quinquecarinate, as I have already suggested.[1]

MABUIA TYTLERI, Blgr.

M. tytleri, *Blgr.*, *Faun. Ind.*, *Rept.*, p. 191.

Of this Andaman Skink the Museum possesses seven adults and a young one. One of the adults was obtained in the Botanical Gardens near Calcutta by the late Dr. Anderson; but probably it had been introduced with specimens of living plants. As Boulenger had only Theobald's and Stoliczka's imperfect descriptions to go upon, it may be well to give a new diagnosis of the species, which is very distinct from any other.

Lower eyelid scaly: a postnasal. Body stout, head large, triangular; snout moderate, obtusely pointed; cheeks swollen in the adult; tail long and slender, more than twice the length of head and body when perfect. Nostril behind suture between rostral and first labial; supranasals generally in contact behind rostral; anterior loreal not, or but slightly, deeper than posterior, in contact with second, sometimes also with first, labial; frontsnasal slightly broader than long; præfrontals in contact mesially; frontal generally as long as frontsparietals and interparietal together, in contact with second supraocular; four supraoculars, second largest; superciliaris inclined to break up irregularly. Ear-opening crescentic, vertical, smaller than a lateral scale, without, or with small and indistinct, anterior lobules. Dorsal scales tricarinate, nuchals and laterals feebly keeled; 24 to 26 scales round centre of body, subequal. The hind limb reaches the axilla. Subdigital lamellæ smooth. *Coloration*: dorsal surface uniform greyish brown, spotted on both limbs with dark-brown and white; ventral surface dirty-white or greenish, tail dull-green or dull yellow.

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[1] **J.A.S.B. (2), 1904, Suppl., p. 19.**

In the young there is a dark lateral stripe which gives the Lizard much the appearance of *Lygosoma maculatum*, with which, judging from specimens in the Indian Museum, it has sometimes been confused. Even a very superficial examination is of course sufficient to distinguish between the two forms. The dimension, at any rate in respect to length, appear to exceed those of *M. multifasciata;* but the tail is very brittle and none of our specimens seem to be quite perfect as regards this organ. The shape of its head is very different from that of this species.

M. tytleri appears to be much scarcer than *M. multifasciata* in the Andamans.

MABUIA MONTICOLA, (Theob.)

Euprepes monticola, Gthr., apud *Theobald* (nec. *Günther*) *Rept. Brit. Ind.*, p. 52.

The specimens described as *Euprepes monticola*, Gthr., by Theobald in his *Reptiles of British India* are quite distinct from that form, which is (as Boulenger states) a synonym of *Mabuia dissimilis* (Hallow). The following description is based upon Theobald's examples, three in number, and a young specimen from Arakan (*Mus. colltr.*).

Lower eyelid scaly: a postnasal. Habit slender; head very small; snout short, obtusely pointed; tail slender, about $1\frac{4}{5}$ times the length of head and body. Hind limb reaches the elbow of adpressed fore-limb. Supranasals meet behind rostral, frontonasal broader than long; præfrontals in contact behind frontonasal; four large supraoculars followed by one small one, second largest, in contact with frontal; parietals entirely separated by interparietals, with straight posterior termination; one pair of nuchals. Ear-opening subcircular, smaller than a lateral scale, with several feeble anterior lobules. Dorsal scales bi-, tri- or quinquecarinate, generally with only two keels distinct 34 to 36 scales round centre of body. The colour has completely faded in the specimens.

Theobald's specimens have no history; possibly they come from the Eastern Himalayas or the hills of Assam.

MABUIA ANAKULAR, nom. nov.

Euprepes longicaudatus, *Anderson* (nec *Hallow*), *J.A.S.B.* (2) XL, 1871, p. 13.

The specimen described by Anderson as *Euprepes longicaudatus* represents a very peculiar form, resembling in its elongated and cylindrical shape some members of the genus *Lygosoma* but technically belonging to the genus *Mabuia*. As Anderson's name was preoccupied by Hollow, I have rechristened the species. The following description is based upon Anderson's specimen:—

Habit snake-like; limbs well developed, pentadactyle, hind limb reaching elbow of adpressed fore-limb; distance between tip of snout and fore-limb contained $1\frac{1}{3}$ times in distance between axilla and groin. Head very small; snout short, obtusely pointed, convex above. Lower eyelid scaly; a postnasal. Supranasals separated by frontonasal. Præfrontals form a median suture; frontal shorter than frontoparietals and interparietal together; parietals meet behind interparietal, one pair of enlarged nuchals. Ear-opening a little smaller than eye-opening, longitudinal, without lobules. Thirty scales round centre of body; dorsals, laterals and nuchals with 4 to 6 keels, only two of which are at all strongly marked. Length from snout to vent 35 mm.; tail (now much broken) at least three times as long as, stout in comparison with, body.

One specimen from Cachar (*Mus. colltr.*).

Anderson was right in regarding this species as allied to Theobald's *Euprepes monticola*, from which, however, it is quite distinct.

LYGOSOMA MACULATUM, (Blyth)

L. maculatum, *Blgr.*, *Faun. Ind.*, *Rept.*, p. 196.

Comparison with other specimens (of which we have a very large series), shows that those from Narcondam (see Annandale, *J.A.S.B.*, (2) 1904, *Suppl.*, p. 13) belong to this species. Boulenger says (*loc. cit.* and similarly in the *Catalogue of Lizards* iii, p. 242), "distance between end of snout and fore-limb equals $1\frac{1}{5}$ to $1\frac{1}{2}$ times distance between axilla and groin." This is obviously a *lapsus calami*, for the latter distance is the greater.

LYGOSOMA MITANENSE, sp. nov.

Diagnosis—

Allied to *Lygosoma indicum*, with which it agrees in lepidosis, except that it has 42 smooth scales round the centre of the body, the dorsals being considerably larger than the laterals or the ventrals. The hind limb reaches a point midway between the shoulder and the ear. Length from tip of snout to fore-limb is contained about $1\frac{1}{4}$ times between axilla and groin. The tail, which is laterally compressed, is more than twice the length of the head and body. The type is much discoloured but appears to have been marked in much the same way as *L. maculatum.*

Dimensions of type—

Total Length ...	130	mm.
Head	10	,,
Body	34	,,
Tail	91	,,
Fore-limb	16	,,
Hind Limb ...	25	,,
Breadth of Head ...	6·5	,,

A single specimen from Meetan, Lower Burma (*Tenasserim Expt.*).

LYGOSOMA DUSSUMIERII var. CONCOLOR, var. nov.

We have a specimen from Canara (*Col. Beddome*) which perhaps differs sufficiently from others to be given a varietal name, though the differences may be due to age. The rostral is convex; the dorsal and lateral surfaces are of an almost uniform pale bronze marbled on the sides of the neck with white, a colour which appears in the same manner on the labials and the sides of the tail; the size is greater than that of any other specimen I have seen (snout to vent 57 mm; tail 105 mm.).

LYGOSOMA OLIVACEUM var. GRISEUM, (Gray).

The only specimen of this variety in the Museum is one from Sinkip Island (*J. Wood-Mason*). Mr. Boulenger has kindly examined it. Specimens from the Andamans and Nicobars belong to the typical variety.

LYGOSOMA CACHARENSE, sp. nov.

Diagnosis.

Subgenus *Keneuxia*, Gray.

Habit lacertiform; limbs well developed, pentadactyle; hind limb reaches wrist of adpressed fore-limb. Distance between tip of snout and fore-limb contained 1½ times in distance from axilla to groin. Snout short, obtuse, convex above; lower eyelid scaly; no supra- or postnasals. Præafrontals meet behind rostral; frontal as long as frontoparietals and interparietal together; frontoparietals meet behind parietal; so enlarged nuchals. Fifth and sixth upper labials beneath eye, enlarged. Ear-opening almost as large as eye-opening, oval, vertical. Twenty-four smooth, subequal scales round centre of body, nonimbricate laterally; præanals slightly enlarged. Tail less than twice the length of head and body. *Coloration*—dark-brown above, with darker lateral line; paler below :—

Total Length	... ...	118 mm.
Head	... ...	10 „
Body	... ...	35 „
Tail	... ...	73 „
Fore-limb	... ...	12 „
Hind Limb	... ...	23 „
Breadth of Head	... ...	7 „

One specimen from Nemotha, Cachar (*J. Wood-Mason*).

LYGOSOMA PULCHELLUM (Gray)

L. pulchellum, *Blgr., Cat. Liz.* iii., p. 254, pl. xvii, fig. 1.

I have been somewhat surprised to find an example from Tavoy (*Mus. colltr.*) of this extremely beautiful and distinct little Skink, which was described from the Philippines. It agrees closely both as regards lepidosis and proportions (actual and relative) and as regards coloration with Boulenger's description and figures. Major Alcock has kindly examined some of its most characteristic features with me.

LYGOSOMA SIKKIMENSE (Blyth)

There is a specimen from Simla in the Indian Museum, wrongly identified as *L. doriæ.* I am not aware that the species has been recorded hitherto from the Western Himalayas.

LYGOSOMA TRAGBULENSE, Alc.

L. himalayanum *var.* tragbulense, Alcock, *Report N. H. Pamir Bound. Comm.*, p. 36, pl. II, figs. 1, 1*a*.

Out of eleven specimens of *Lygosoma* collected on the Tragbal pass by Dr. G. M. Giles four belong to Alcock's variety *tragbulense*, while the remainder represent the typical *L. himalayanum.* Some of the latter are very much smaller than those of *tragbulense*, which, as well as the types, are fairly well grown. The coloration, therefore, cannot be due to youth; and though variety in coloration in itself is not a safe specific difference in the Skinks, it may be taken, when it is very distinctive, as an additional reason for separation if combined with differences in scaling. The greater number of subdigital lamellæ on the fourth toe which Alcock noted in his specimens, is constant, as are also the characteristic dorsal and lateral stripes, while the ventral scales have not the obscure dark edging common in *L. himalayanum* but are of an opaque white. There may be two scales under the eye; but this character is not constant.

LYGOSOMA BEDDOMII, Blgr.

The only specimen in our collection which can be assigned to this species differs from the descriptions in that the limbs do not meet when adpressed. Otherwise it conforms to Boulenger's diagnosis.

LYGOSOMA FORMOSUM (Blyth)

Mocoa formosa, *Blyth, J.A.S.B.*, (2) xxii, p. 651; *Blgr., Faun. Ind., Rept.*, p. 205.

The following description is based on the three types of Blyth's imperfectly described species:—

Subgenus *Emoa*, Gray.

Habit stout; head moderate; snout obtusely pointed; limbs well developed, overlap slightly; head and body about $\frac{3}{5}$ length of tail. Lower eyelid with an undivided transparent disk, no supra or postnasals. Nostril behind suture between rostral and first labial; rostral forms a straight or nearly straight sulture with frontonasal; præfrontals in contact; frontal in contact with

1st and 2nd supraculars; 4 supraoculars, 2nd longest; 6 to 8 superciliaries, subequal; frontsparietals distinct; no enlarged nuchals. Dorsal scales smooth, larger than ventrals or laterals; 30 to 34 scales round centre of body. *Coloration*—Dorsal surface olive-green or pale-brown, spotted with dark-brown and white; a dark lateral band, also spotted with white; ventral surface and tail pale-brown or olive-green.

From Mirzapore (North-West Provinces) and Wazirabad, Punjab.

LYGOSOMA ATROCOSTATUM (Gray)

L. atrocostatum, *Blgr.*, *Cat. Liz.* iii., p. 295; *S. Flower*, *P.Z.S.* 1899, p. 649.
L. jerdonianum, *Blgr. t. c.*, p. 300.
L. singaporense, *id.*, *t.c.*, p. 297.

In addition to Stoliczka's type of *Mabouya jerdoniana* from Pulau Tikus (Rat Island) off Penang, we have a specimen from Sinkip Island (*J. Wood-Mason*) which resembles it closely on the whole but has only 34 scales round the centre of the body, and six specimens from Borneo (*Sarawak Mus.*). These Bornean and Sinkip specimens have a single frontoparietal, while this scale is only partially divided in Stoliczka's. One of the Bornean specimens has supraoculars. I agree with Flower in regarding *L. jerdonianum* as a synonym of *L. atrocostatum*, to the synonomy of which I would also add *L. singaporense*, though I have not seen a specimen of the last.

L. atrocostatum does not appear to have been recorded from Sumatra, where it probably occurs, being found on Sinkip.

LYGOSOMA CHINENSE (Gray)

L. chinense, *Blgr.*, *Cat. Liz.* III, p. 318.

A specimen from Hong Kong (*J. Wood-Mason*) must, I think, be referred to this species. It has 4 supraoculars, and the coloration is as follows:—dorsal surface pale brown; lateral surfaces and tail mottled with dark brown and white; a dark lateral line starting from below the eye and becoming indistinct behind the fore-limb: ventral surface yellowish.

LYGOSOMA LINEOLATUM (Stol.)

A specimen from Martaban is probably one of the types, but is entered in the Museum register simply as purchased, which is the case with other types of Stoliczka's.

LYGOSOMA COMOTTII, Blgr.

A specimen from Tavoy (*Mus. colltr.*) agrees with Boulenger's description except that the fifth, not the sixth, upper labial is under the centre of the eye. The species does not appear to have been recorded from Lower Burma.

LYGOSOMA ANGUINUM (Theob.)

In addition to the types we have another specimen from Pegu and one from Amherst in Northern Tenasserim.

EUMECES SCUTATUS (Theob.)

E. tæniolatus, *Blanf.* Res , *2nd Yark. Miss.* Rept. p. 19.
E. scutatus, *Blgr. Faun. Ind. Rept.*, p. 218.

The Museum has specimens from Sind (*Karachi Mus.*); Rajputana (*N. Bellety*); N. Kashmir (*2nd. Yarkand Miss.*); Chitral (*F. J. Daly*), and Afghanistan (*Dr. R. M. Green*). The species has frequently been confused with *E. tæniolatus.*

EUMECES TÆNIOLATUS (Blyth)

E. tæniolatus, *Blgr, Faun, Ind., Rept.*, p. 219.

Of this species we have only two true specimens, both from the Punjab Salt Range (*Theobald*). One has two, the other only one postmental; otherwise they agree closely, differing considerably from the preceding form.

SCINCUS MITRANUS, Anders.

S. mitranus, *Blgr., Cat. Liz.* iii,p. 393.
S. arenarius, *id., t.c* p. 392; & *Faun. Ind., Rept.*, p. 221.

In his description of *S. mitranus* Anderson states that it has five supraoculars. The type, however, (the locality of which is doubtful) has six on one side of the head; while on the other traumatic injuries to the skin forbid an opinion. Specimens of Murray's *S. arenarius* from Sind agree in every other respect with this individual, which is, on the whole, well preserved.

CHALCIDES OCELLATUS (Forsk.)

There are a number of specimens (*purchased*) in the Museum said to come from Haldibari (Kooch-Behar): their true *provenance* is doubtful but probably Indian. They belong to var. A of Boulenger's *Catalogue* (iii, p. 401), as also do Persian examples (*Blanford*), but are rather darker than examples from Palestine and Egypt.

LIZARDS OF INDIA, BURMA AND CEYLON (II).

LACERTIDÆ.

156.	Tachydromus sexlineatus, Daud.	E. Himalayas; Assam; Burma.
157.	,, septentrionalis,* Gthr.	Assam (= *T. tachydromoides* Schleg. (*partim*) in Blgr., *Faun. Ind., Rept.*, p. 169).
158.	Acanthodactylus cantoris, Gthr.	N.-W. India.
159.	,, micropholis,§ Blanf.	Baluchistan; Sind.
160.	Cabrita leschenaultii (M.-Edw.)	S. India as far north as S. E. [Berar.
161.	,, jerdonii, Bedd.	Godavari Valley; Ellore.
162.	Ophiops jerdonii, Blyth.	Central and N.-W. India.
163.	,, beddomi (Jerd.)	S. India; Bombay Presidency.
164.	,, elegans, Ménétr.	Punjab.
165.	,, microlepis,§ Blanf.	N. India from Katch to W. Bengal.
166.	Eremias guttulata (Licht.)	Sind; Baluchistan.
167.	,, brevirostris§ (Blanf.)	Punjab.
168.	,, velox (Pall.)	Baluchistan.
169.	,, fasciata,§ Blanf.	Baluchistan.
170.	Scapteira scripta,* Strauch	N. Baluchistan (*Antea*).
171.	*Scapteira acutirostris*, Blgr.	N. Baluchistan.
172.	Scapteira aporosceles,*§ Alc. & Finn	N. Baluchistan (Alcock & Finn, ***J.A.S.B.*** (2) 1896).

SCINCIDÆ.

173.	Mabuia bibronii (Gray.)	S. India; Ceylon.
174.	*Mabuia doriæ*, Blgr.	Upper Burma.
175.	Mabuia dissimilis (Hallow)	N. India from Sind to Bengal.
176.	,, septemtæniata (Reuss)	Sind.
177.	,, novemcarinata§ (Anders.)	Mandalay.
178.	,, beddomii (Jerd.)	S. India, north to S.-E. Berar.
179.	,, vertebralis, Blgr.	Central India.
180.	,, rugifera§ (Stol.)	Nicobars.
181.	,, multifasciata (Kuhl)	Assam; Burma; Andamans and [Nicobars.
182.	,, tytleri, Blgr.	Andamans; Calcutta (introduced ?).
183.	*Mabuia quadricarinata*, Blgr.	Kakhyen Hills, Upper Burma.
184.	Mabuia monticola *§ (Theob.)	Arakan; ? E. Himalayas (*Antea*).
185.	,, anakular,*§ Annand.	Cachar (= *Euprepes longicaudatus* Anders. *Antea*).
186.	Lygosoma indicum (Gray)	E. Himalayas; Hills of Assam and Burma.
187.	,, mitanense,*§ Annand.	Lower Burma, (*Antea*).
188.	,, maculatum (Blyth.)	N. Bengal; E. Himalayas; Assam Burma.
189.	,, dussumieri, D. & B.	Malabar province.
190.	,, olivaceum (Gray)	Tenasserim; Andamans; Nicobars.
191.	,, cacharense,*§ Annand.	Cachar (*Antea*).
192.	*Lygosoma subcæruleum*,* Blgr.	Travancore (Blgr; *Ann. Mag. N. H.* 1891, p. 289).
193.	,, pulchellum * (Gray)	Tavoy (*Antea*).
194.	*Lygosoma kakhienense*, Blgr.	Kakhyen Hills, Upper Burma.
195.	Lygosoma melanostictum, Blgr.	Tenasserim; Tavoy.
196.	,, sikkimense (Blyth)	W. Bengal (Pareshnata Hills); E. Himalayas; Simla.
197.	,, himalayanum (Gthr.)	W. Himalayas; Kashmir; Central Provinces.
198.	,, tragbulense,*§ Alc.	Tragbal Pass, Kashmir (Alc., *Pamir Bound. Comm. N. H.*, p. 36).
199.	*Lygosoma doriæ*, Blgr.	Upper Burma.

200. Lygosoma ladacense (Gthr.)	Ladak.
201. *Lygosoma laterimaculatum*, Blgr.	S. India.
202. Lygosoma bilineatum[1] (Gray.)	„
203. Lygosoma beddomii, Blgr.	S. India.
204. „ macrotympanum § (Stol.)	S. Andamans.
205. *Lygosoma macrotis* (Steind.)	Nicobars.
206. Lygosoma formosum*§ (Blyth)	N.-W. Provinces; Punjab (*Antea.*)
207. „ taprobanense, (Kel.)	Ceylon.
208. „ fallax, Ptrs.	„
209. „ lineolatum § (Stol.)	Martaban, Lower Burma.
210. „ comotti, Blgr.	Upper Burma; Tavoy.
211. „ albopunctatum (Gray)	S. & E India; Assam; Burma.
212. „ punctatum (Linn)	Peninsular India; Ceylon.
213. „ guentheri (Ptrs.)	S. India; C. India; Bombay.
214. „ cyanellum[2]§ (Stol.)	Burma.
215. „ aguinum § (Theob)	Pegu; N. Tenasserim.
216. *Lygosoma calamus*, Blgr.	Upper Burma.
217. Lygosoma lineatum (Gray)	Central Provinces.
218. *Lygosoma punctatolineatum*,* Blgr.	Bia-po, Burma (Blgr., *Ann. Mus. Genova*, 1893, p. 321.)
219. Ablepharus brandtii, Strauch	Punjab; Sind; Baluchistan.
220. „ grayanus,§ (Stol.)	Katch and Sind.
221. Ristella rurkii, Gray.	Anamalay Hills, S India.
222. „ travancorica, Bedd.	Travancore (hills).
223. *Ristella guentheri*, Blgr.	Madura (hills).
224. Ristella bedomii, Blgr.	S.-W. India (hills).
225. Tropidophorus berdmorii, (Blyth)	Lower Burma.
226. *Tropidophorus yunnanensis*, Blgr.	Kakhyen hills, Upper Burma.
227. Eumeces scutatus (Theob.)	Sind; Katch; Punjab; Kashmir; Chitral.
228. „ tæniolatus§ (Blyth)	Punjab Salt Range.
229. „ schneideri (Daud)	Baluchistan.
230. „ blythianus§ (Anders.)	? Punjab; Afridi District.
231. Scincus mitranus,*§ Anders.	Sind (-*S. arenarius*, Murray. *Antea.*)
232. Ophiomorus tridactylus (Blyth)	Punjab; Sind; Baluchistan.
233. *Ophiomorus blandfordii*, Blgr.	Baluchistan.
234. Chalcides ocellatus (Forsk)	Sind.
235. *Chalcides pentadactylus* (Bedd).	Beypore, Malabar.
236. *Sepophis punctatus*, Bedd.	Golgonda and Godavari Hills.
237. *Chalcideseps thwaitesii* (Gthr.)	Ceylon.
238. Acontias burtonii (Gray)	„
239. „ monodactylus (Gray)	„
240. „ layardii, Kelaart	„
241. *Acontias sarasinorum*, F. Müller	„

DIBAMIDÆ.

242. Dibamus novæ-guineæ, D. & B.	Nicobars.

In the above list, as in that of the preceding families, a * opposite a name indicates that the species is new to the Indian fauna since 1890; a § that the Indian Museum possesses a type or cotype. Names in italics are those of species not represented in the collection.

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[1] Y. Rama Chandran, M.A., student, Madras, has lately sent me a specimen of *L. bilineatum* which has, as he points out, 26 scales round the body. June 22nd, 1905.

[2] Including *L. fex*. See Boulenger, *Ann. Mus. Gen.* (ii) xiii, p. 320.

In Boulenger's volume in the "Fauna of India" (1890), 221 species of Lizards are described; at present 242 appear to occur within the Indian Empire and Ceylon, but the grounds on which three of these are included are a little insecure. The majority of the species added have been new to science, but a few previously known from other parts of Asia have been recorded from Baluchistan. Several new forms have been described from the same neighbourhood several from Burma (chiefly from Lower Burma), one from S. India, two from the Andamans and one from Cachar. Undoubtedly novelties still remain to be discovered, especially in the extreme east of the Empire; and probably certain forms now regarded as solely Malayan will be found also in Tenasserim. Several forms, e.g. *Lygosoma zebratum* and *L. feæ* have been shown to be at most varieties of previously described species.

Mr. Grey Pilgrim, of the Geological Survey of India, has lately collected in Eastern Arabia and presented to the Museum the following specimens:

Uromastix microlepis, (Blanf.)	...	One specimen.
Varanus griseus (Daud.)	...	„
Eremias brevirostris (Blanf.)	...	Two specimens.

I neglected to mention in the former part of this paper, that *Gymnodactylus khasiensis* has lately been recorded from Upper Burma by Boulenger, *Journ. Bombay N.H. Soc.*, xiii, p. 553.

July 26th, 1905.

Note.—Through the kindness of Dr. A. Willey, F.R.S., Director of the Colombo Museum, I have lately had an opportunity of examining the types of Nevill's *Euprepes halianus*, a Ceylonese Skink regarding the systematic position of which Boulenger expresses a doubt. As they possess retractile claws, while otherwise agreeing with *Lygosoma*, I propose to place them in a new genus *Theconyx*, which will be fully described later in *Spolia Zeylanica*, the organ of the Colombo Museum. August 23rd, 1905.

17. *Tibet, a dependency of Mongolia.*—(1643—1716 A.D.).—*By Rai* SARAT CHANDRA DAS, *Bahadur*, C.I.E.

The six Khanates of Mongolia had, for a long time, remained under a solemn compact which kept them in peace. At last, the Khan of Chakar, named Legdan, who had grown ambitious, made a breach into it, in consequence of which internal dissensions broke out among them. Friendly advisors and intermediators came from the neighbouring States to bring upon reconciliation among the contending parties in Khalkha, the country of the Kulmuc Mongols. One of the claimants to inheritance in that Khanate being driven out of the country, came with his hordes to the bank of Lake T'hig-Çôg Gyalmo and took possession of the province of Hoço-tshe of Thumed-Mongolia. His descendant who had settled there was attached to the *shwamar* or Red-cap School of Tibet. About this time the two rival sects of Buddhism, namely, the Red-cap and the Yellow-cap Lamas, were fighting with each other in Tibet. Rab-chyampa, a representative of the Red-cap sect proceeded to Mongolia and appealed for help to the Khan of Hoço-tshe. In the year *Tree-hog* the Khan sent his son Arsaling (Abaling) at the head of 10,000 Tartars to Tibet to extirpate the Yellow-cap Church. The prince being humane and pious refrained from doing injury to the Yellow-cap Lamas, so the Red-cap Lamas, out of spite, sent misrepresentations against him to his father, accusing him of partiality to their enemies. The Khan, who was at that time engaged in war in the Kokonor country, became furious at his son's conduct and wrote to the Rab-chyampa to take the prince's life. On Arsaling's death, which was probably caused either by poison or assasination, the Tartar troops were thrown into disorder. For the want of a leader they dispersed like a cloud and returned to their country. About this time the Khan of Duthukthu, a descendant of Jenghis Khan, who had also espoused the cause of the Red-cap Lamas, started from Chakar with a large army to help them in their struggle with the Yellow-Church. But on his arrival at Kokonor he accidentally died. A great enemy of Buddhism now arose in Kham, who followed the Bon religion. This was the King of Beri, named Don-yo dorje. He, like King Langdarma, had destroyed all the Buddhist Institutions of Kham belonging to the Red-cap and the Yellow-cap sects. He was about to start with a large army for conquering Tibet proper when the Khan of Œleuth Mongols entered Kham with his Tartar hordes. This was Gushi Khan the third of the five sons of the Khan of Hoçod, one of the four divisions of Orad Mongolia. Like Jenghis Khan, he too was believed to have been an incarnation of the Lord of Death. His native name was Toral Beh̲u, but he is better known by the names Gushi Khan or Gegan Khan. Owing to his devotion to the cause of the

Yellow-cap Church he is known in Tibet by the Tibetan name of Tenzing Choigyal, the upholder of religion or Dharma Rājā. While only thirteen years of age he was entrusted by his father with the leadership of the Tartar hordes. He defeated the Gokar[1] Tartars and brought them under subjection in 1593. At the age of 25 he was successful in reconciling the Kulmucs of Khalkha with the Œleuth Mongols who were quarrelling on account of a question of precedence between the hierarch of Gahdan and Ston s̱kor Sabs̱-drung named Jetsundampa, and thereby averted a fierce and bloody war in the heart of Mongolia. For this service, he was decorated with the holy order of Tā Kausri by the Emperor of China in 1605, from which circumstance his name Kushri or Gushi Khan had originated. At the age of 35, at the earnest entreaties of *Desrid* Sonam Choiphel, Paṇchen Rinpoche of Tashilhampo and other representatives of the Yellow-Church, he agreed to march into Tibet to punish their enemies. In the year *Fire-ox* in the first month, *i.e.*, February, he entered Kokonor with a large army. He despatched about 10,000 troops to Çhog-thu in Khalkha to suppress a rebellion there. His hordes routed 40,000 Tartars in a single battle fought at Utan Hoço in one day, and killed the Khan. From Kokonor, Gushri Khan moved towards Tibet. He reached the great monastery of Gahdan in the auspicious evening of the 27th day of the month, when he saw a halo of light brightening the horizon at dusk.

During the winter of that year he again visited Kokonor, and from there proceeding to Kham, on the 25th of the 11th month, he annexed the whole of King Beri's dominions to his kingdom. Seeing that Beri would be dangerous to both the Church and the State he put him to death and released the Lamas of the several Buddhist sects who had been thrown into prison by that apostate king of Kham. Gushri then brought under his control all the territories bordering on Jangsathul—the dominions of the king of Jangsa. Then entering Tibet proper with his invincible hordes, he made presents to the great monasteries of the Yellow-Church and proclaimed his authority over the whole country. From Lhasa he marched to Tsang with the major portion of his army. In the year called *water-horse*, on the 8th of the first month, he captured thirteen large *jongs* (forts), including that of Samdub-tse at Shigatse, and overthrew the power of the king of Tsang. On the 25th of the 11th month he threw him into prison. At first, out of respect for the valour of the fallen monarch, he did not order him to be beheaded, but at the representation of the leaders of the Yellow-Church he was found guilty of the highest crime, having had established a rival monastery of the Red-cap Church, called Tashizil, in the immediate vicinity of Tashilhunpo, with the object of ruining the latter. Gushri Khan caused him to be packed in a hide[1] and then threw him into the river. He then commenced the pious work of establishing a University with thirteen colleges, which were called Ling or divisions, at Lhasa, for the education of both the laity and the clergy. Of these thirteen Lings only four have survived, namely, Tan-gyeling, Tshe-chog-Ling, Kûndû-Ling and Tshemo-Ling. He brought all the great *Cholka* or Provinces of Tibet under his power. Hearing that the Lamas of Kongpo, were greatly attached to the Red-cap Karmapa Sect, he sent a division of his army there and annexed the eastern provinces to his dominions. He now declared himself the supreme ruler of all Tibet and Mongolia, and sat on the Lion-throne of Potala at Lhasa. On this auspicious occasion he received presents from the border states of India, such as—Bushing (probably Bushahir), Yambu (Nepal), Ngah-ri (Ladak), etc. The Tibetans of the older sects began to regard him as an incarnation of their saint Padma Sambhava. After making the Yellow-Church dominant all over Tibet and Mongolia he shewed tolerance to the followers of the rival sects and patronized learning. Thus Mongolia and Tibet being brought together under the sovereignity of one Royal Umbrella, the religion of Buddha, as reformed by Tsongkhapa, flourished and shone with greater lustre than it had done even during the reformer's time. Under the benign rule of this devout king all classes of people enjoyed peace and prosperity, as if they were living in the ideal age of perfection.

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[1] The Western Mongolians who had become Mahomedans were called Gokar on account of their using the white *Pagri*, from *go* head and *kar* white.

After Gushri Khan's death his son Dayan Khan reigned for fourteen years over Tibet. On his death his son Talai Khan, also called Ratna Gyalpo, succeeded to the throne. Ratna's eldest son named Tanzin Wangyal succeeded him, but he did not reign long, being mysteriously poisoned. During the reigns of these kings the office of the *Desrid* was successively filled by Pon Sonam Choiphel for seventeen years, from the year *Iron-serpent ;* by T'hin las Gyatsho for ten years; by Lozang thutob for six years; and by Lozang Jinpa for three years. Then it passed to the layman Sangye Gyatsho who held it for nearly twenty-five years from the year *Earth-sheep*, during which time he completed the building of the nine-storeyed palace on Potala called the Phodang Marpo. In the year *Fire-tiger* there was war between the Khalkha and the Œleuth Mongols. The hierarch of Gahdan, named T'hi-Lodoi Gyatsho, reconciled the belligerents to each other and induced them to make a treaty of peace. On the death of Tanzing Wañgyal, Lhabzang, the younger son of Ratna who was exiled, succeeded to the throne. His first act was to wreak vengeance[2] on the *Desrid*, Sangye Gyatsho, who had been instrumental in bringing about his banishment. During his exile Lhabzang had collected about 500 Tartar troops. Entering Tibet with them he collected a large army from the 13 *Thikor* of Tibet, besides Kongpo and other provinces and took possession of the throne. In the year *Tree-bird* he killed *Desrid* Sangye Gyatsho. He reigned for nearly thirteen years.

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[1] This punishment is called *Ko-thûmgyab-pa*, i.e., packing the criminal in hide or skin and then throwing him in the deep water of a river. This is the capital punishment that is inflicted on the higher class of criminals in Tibet.

[2] At this period it was suspected that the Lama authorities of the Yellow-cap Church were intriguing to kill the king (Lhabzañg) by exorcism.

Hearing the news of *Desrid's* violent death, the Khan of Chungar (Zungaria), the left branch of the Œleuth Mongols named Hûng Thaijé, who was devoted to the Yellow-cap Church, sent presents to the Dalai Lama, and with a view to restore peace and prosperity in the troubled land of the Lamas, sent his generals to invade Tibet with a large army. In the year *Fire-bird* they captured Lhasa, defeating Lhabzang in a battle in which he fell. Thus in 1716 ended the short-lived kingdom founded by Gushri Khan in Tibet. In the year 1717 the Chungar army, after sacking the *Ñingma* monasteries of Namgyaling, Dorje Tag, Mindolling, etc., and making the Yellow-cap Church still more predominant all over Tibet, returned to Mongolia.

18. *Sarvajña-mitra—a Tāntrika Buddhist author of Kāśmīra in the 8th century A.D.—By* PROF. SATIS CHANDRA VIDYABHUSANA, M.A.

Among the manuscripts presented to the Asiatic Society of Bengal by Mr. Hodgson, there is a Buddhist Sanskrit work named Sragdharā-stotra by Sarvajña-mitra. The work derives its name from that of the metre, *viz.*, *Sragdharā*,[1] in which it is written. It is a hymn consisting of 37 stanzas in praise of the Tāntrika goddess Tārā who is called in Tibetan S̱grol-ma. There is a Sanskrit commentary on the work, called Sragdharā stotra-ṭīkā, by Jinarakṣita who was a monk of the great monastery of Vikramaśilā and a spiritual guide of a king of the time.

The commentator states that Sarvajña-mitra, the author of Sragdharā-stotra, was a devout monk of Kāśmīra and was renowned for his unbounded charity. Having given away everything he possessed, he left the country and wandered abroad as a mendicant. Once while he was proceeding to the kingdom of Vajramukuṭa, he met on the way a poor old Brāhmaṇa who was in a very pressing need of money for the marriage of his daughter. The Brāhmaṇa, who was going to the place of Sarvajña-mitra himself for help, having learnt that the latter had nothing left except the beggar's bowl and robe, fell into great despair and shed tears. Sarvajña-mitra, however, consoled him saying: "Be not sad, I shall give you what you ask for." At that time King Vájramukuṭa was told by a certain person that all his desires would be fulfilled if he could wash himself sitting on 100 skulls freshly severed from the trunks. The king who had already secured 99 persons completed the number 100 by purchasing Sarvajña-mitra, who sold his person for its weight in gold which was given to the poor Brāhmaṇa. The 100 victims were in a morning led into the Executioner's Tank by officers of the king. Sarvajña-mitra finding no means of escape composed and chanted 37 stanzas in praise of Āryā Tārā, whereupon *all* the victims were miraculously saved and taken to their respective homes. Heaps of gold equal to the weight of the victims remained deposited on the edge of the tank. The king, surprised at the miraculous power of the monk, became a disciple of his.

The story of Sarvajña-mitra and a literal Tibetan translation of the Sragdharā-stotra are to be found in the Tangyur, section R̥gyud, vol. L.

A similar story about Sarvajña-mitra is narrated in the Tibetan work called Pāgsam-jon-zang edited by Rai Sarat Chandra Das

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[1] The Sragdharā metre contains twenty-one syllables in each foot broken into three equal parts. In the Chandomañjarī, the Sragdharā verse is thus scanned :—

— — — — ⏑ — — ⏑ ⏑ ⏑ ⏑ ⏑ ⏑ — — ⏑ — — ⏑ — —

Bahadur, C.I.E. According to this work Sarvajña-mitra, though born in Kāśmīra, was a student of the monastery at Nālanda in Magadha where he became a great master of sciences. The king to whom he sold his person is called Vajra-mukuṭa in the Sanskrit Sragdharāstotraṭikā, while he is called Saraṇa in the Tibetan, Pāgsam-jon-zang. The story contained in the Pāgsam-jon-zang (p. 102) runs thus:—

"A little bastard child of the King of Kāśmīra was carried away by a vulture from the roof of the palace and dropped on the top of the Gandhola (the great central temple) of Nālanda in Magadha. The Pandits of the Vihāra, taking mercy on it, nursed it. As he grew up the child acquired great knowledge and became a scholar. He propitiated the goddess Ãryā Tārā and thereby acquired great wealth. He gave away all his riches in charity, and when there was nothing left he started on a journey to Southern India. Meeting on the way an old blind Brāhmaṇa who was being led by his son, he inquired where he was going. Being told that the blind Brāhmaṇa who was very poor had started on his distant journey to beg help from Sarvajña-mitra of Nālanda, he was overpowered with pity and determined to sell his own body to give gold to the helpless beggar. At this time he learnt that King Saraṇa, who at the advice of his wicked spiritual guide had undertaken the performance of a *Yajña* in which 108 human sacrifices were necessary, was in search of one more victim which was wanting to complete the full number. The king was convinced that if he successfully performed the *Yajña* he would attain the longevity equal to the sum of the longevity of 108 souls that would be sacrificed in it. Sarvajña-mitra sold himself to the king and paid the gold that he had obtained therefrom to the blind Brāhmaṇa. While waiting one night for death in a dark dungeon he invoked the goddess Tārā with the utmost concentration of his mind. When fire blazed up from the piled firewood and all the 108 men were led in chains to the pyre, a heavy shower of rain fell which extinguished the fire within a short time and converted the whole plain where the sacrifice was being performed into a large sheet of water resembling a lake. The king and his ministers hearing that this was due to the mercy of the goddess Tārā who was invoked by the victim who had sold himself to save others, now acquired faith in the religion of Buddha and having released all the 108 victims of the unholy sacrifice sent them to their respective homes loaded them with presents. Sarvajña-mitra before whom the goddess had miraculously appeared, held fast a corner of her celestial robe and was carried to the land of his birth."

The same story is related in Lama Tārānātha's history of Buddhism (*vide* A. Schiefner, p. 168 ff.).

Neither in the Sragdharā-stotra nor in its commentary is there any mention of the date of either of the two works. Dr. Rājendra Lāla Mitra who notices the two works in his Buddhist Literature of Nepal, p. 228, says nothing about their dates. The Rājataraṅgiṇī, the well-known chronicle of Kāśmīra, supplies us, however, with some data to determine the age of Sarvajña-mitra the author of Sragdharā-stotra. In Book IV, verse 210 of the Rājataraṇgiṇī, we find that Bhikṣu Sarvajña-mitra, who appeared as another Jina, resided in Kayyavihāra, which had been built by King Kayya. This Kayya is stated to have been a king of Lāṭa or Central and Southern Guzerat, and was subordinate to King Muktāpīḍa-Lalitāditya of Kāśmīra. As Lalitāditya is generally held to have lived early in the 8th Century A.D., Sarvajña-mitra who resided in Kayyavihāra could not have flourished before that time. As the monastery of Nālanda was destroyed in the 9th century A.D., Sarvajña-mitra, who was educated there, could not have lived after that time. This leads me to suppose that Sarvajña-mitra lived in the middle of the 8th century A.D.

King Vajramukuṭa or Saraṇa has not yet been identified. Vajramukuṭa is perhaps identical with Vajrāditya, son of Lalitāditya, King of Kāśmīra in the 8th Century A.D.

19. *An Analysis of the Laṅkāvatāra Sūtra.—By* PROF. SATIS CHANDRA VIDYĀBHŪṢAṆA, M.A.

The Laṅkāvatāra Sūtra is an ancient Buddhist Sanskrit work, a manuscript of which was brought from Nepal by Mr. Hodgson nearly eighty years ago. It gives an account of a miraculous visit which Buddha paid to Rāvaṇa, the King of Laṅkā. Though the visit was altogether an imaginary one, the book is very valuable as it gives a copious explanation of the Buddhistic metaphysical doctrines as well as an account of several non-Buddhistic sects such as the Lokāyata, Sāṅkhya, Vaiśeṣika, Pāśupata, and others. It is one of the nine most sacred books of the Nepalese Buddhists called their Nava-dhamma.[1]

A Tibetan version of the Laṅkāvatāra Sūtra is found in the Kangyur, Sect. *M*do, Volume V. In Tibetan it is called Hphags-pa-laṅ-kar-gśegs-pa-theg-pa-chen-pohi-mdo, in which it is stated that the Sūtra was translated into Tibetan by order of the Tibetan King Ral-pa-can in the 9th Century A.D. Lo-tsa-wa Ge-long (Hgos-chos-grub), who translated the Sūtra in Tibetan, also added to the translation a commentary of a Chinese professor named Wen-hi.[2]

There are extant three Chinese translations[3] of the Laṅkāvatāra Sūtra. The first translation, which is incomplete, was made by Guṇabhadra, 443 A.D., the second by Bodhiruci A.D. 513, and the third by S'ikṣānanda A.D. 700-704.

Hwen-thsang, who travelled in Ceylon early in the 7th Century A.D., points out the Malaya mountain as the place wherein Buddha, in olden days, sat to deliver the Laṅkāvatāra Sūtra.[4]

The Sūtra was merely known by name to the Pandits of our country from a reference to it in the Sarvadarśanasaṅgraha[5] of Mādhavācāryya in the 14th Century A.D.

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[1] The nine most sacred books of the Nepalese Buddhists are :—

1. Aṣṭasāhasrikā Prajñāpāramitā; 2. Gaṇḍavyūha; 3. Daśabhūmiśvara; 4. Samādhirāja Sūtra; 5. Laṅkāvatāra Sūtra; 6. Saddharmapuṇḍarika; 7. Tathāgataguhyaka; 8. Lalitavistara and 9. Suvarṇaprabhāsa Sūtra.

Divine worship is offered to these nine works by the Buddhists of Nepal. Cf. Hodgson's Illustrations of the Literature and Religion of the Buddhists, p. 19.

[2] *Vide* Csoma de Koros's Analysis of the Kangyur, p. 432 (Asiatic Researches, Volume XX).

[3] *Vide* Bunyiu Nanjio's Catalogue of the Chinese Tripiṭaka, Nos. 175, 176, 177.

The first Chinese translation consisting of 4 fasciculi, 1 chapter, bears two prefaces by Tsiang C'-chi and Su-shi, of the later Suṅ dynasty, A.D. 960-1127. The date of the latter preface corresponds to A.D. 1085. The second Chinese translation consists of 10 fasciculi, 18 chapters. The third Chinese translation consisting of 7 fasciculi, 10 chapters, bears a preface by the Empress Wu-tsö-thien, A.D. 684-705, of the Thāṅ dynasty.

[4] *Vide* Si-yu-ki, Book XI; Beal's Buddhistic Records of the Western World, p. 251.

[5] Mādhavācāryya quotes a passage from the Laṅkāvatāra Sūtra saying :—

The work consists of ten *Parivarta* or chapters named respectively as, (1) Rāvaṇādhyeṣaṇā, (2) Sarvadharmasamuccaya, (3) Anityatā, (4) Abhisamaya, (5) Tathāgatanityānityatva, (6) Kṣaṇika, (7) Nairmāṇika, (8) Māṃsabhakṣaṇa, (9) Dhāraṇī, and (10) the tenth chapter which bears no special name.

Throughout the Laṅkāvatāra Sūtra the speaker is Buddha himself. The first chapter is addressed to Rāvaṇa while the person spoken to in the remaining nine chapters is Mahāmati. Rāvaṇa, King of Laṅkā, prayed to Buddha for the solution of two questions, *viz.*, (1) what is the distinction between *dharma* and *adharma*; and (2) how could one pass beyond both *dharma* and *adharma*. Buddha's answers to these questions form the subject-

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"तदुक्तं भगवता लङ्कावतारे—

बुद्ध्या विविच्यमानानां स्वभावो नावधार्य्यते ।
अतो निरभिलप्यास्ते निःस्वभावाश्च दर्शिताः ॥
(सर्व्वदर्शनसंग्रह, chapter on बौद्धदर्शन) ।

The passage referred to here occurs with a little variation twice in the Laṅkāvatāra Sūtra (in Chapter II. p. 50, and Chapter X. p. 115 respectively of the Bengal Asiatic Society's manuscript):—

बुद्ध्या विवेच्यमानानां स्वभावो नावधार्य्यते ।
यस्मात् तस्माद् अनभिलाप्यास्ते निःस्वभावाश्च देशिताः ।
(लङ्कावतार सूत्र, २ परिवर्त्त, पृः ५०) ।
बुद्ध्या विवेच्यमानानां स्वभावो नावधार्य्यते ।
यस्मादनभिलाप्यास्ते निःस्वभावाश्च देशिताः ॥
(लङ्कावतार सूत्र, १० परिवर्त्त, पृः ११५) ।

The Tibetan versions of the passages run respectively as follows:—

བློ་ཡིས་རྣམ་པར་གཞིགས་ན་ཡང་།
གང་ཕྱིར་རང་བཞིན་མི་རིག་སྟེ།
དེ་ཕྱིར་དེ་དག་བརྗོད་དུ་མེད།
ངོ་བོ་ཉིད་ཀྱང་མེད་པར་བསྟན།།

(Kangyur, *Mdo.*, Vol. V. Leaf 150, A.S. MSS.)

གང་ཕྱིར་བློ་ཡིས་རབ་གཞིགས་ན།
རང་བཞིན་དག་ནི་མི་དམིགས་ཏེ།
དེ་ཕྱིར་དེ་དག་བརྗོད་དུ་མེད།
ངོ་བོ་ཉིད་ཀྱང་མེད་པར་བཤད།།

(Kangyur, *Mdo*, Vol. V. Leaf. 253, A.S. MSS.)

"Of things that are discerned by intellect no self-existence can be ascertained; therefore they are shown to be inexplicable and essenceless."

matter of the first chapter. Thereafter one hundred and eight questions were raised by Mahāmati; Buddha's answers to these are treated in the remaining nine chapters.

Some information about the author of the Laṅkāvatāra Sūtra may be gathered from the following verses occurring in the 10th Chapter of the work :—

माता च मे वसुमतिः पिता विप्रः प्रजापतिः ।
कात्यायनसगोत्रोऽहं नाम्ना वै विरजो [1] जिनः ॥
चम्पायाहं समुत्पन्नः पितापि स पितामहः [2] ।
सोमगुप्तेति नाम्नासौ सोमवंशसमुद्भवः ॥

(A.S. MSS. p. 143).

The Tibetan version of the above runs thus :—

ང་ཡི་མ་ནི་ནོར་ལྡན་དེ།
ཕ་ནི་བྲམ་ཟེ་སྐྱེ་དགུའི་བདག།
ང་ནི་ཀཱ་ཏྱཱ་ཡ་ནའི་རིགས།
མིང་ནི་རྡུལ་མེད་རྒྱལ་བའོ།།
ཡབ་དང་མེས་དང་ང་བདག་ཀྱང་།
ཡུལ་ནི་ཙམ་པར་སྐྱེས་བ་སྟེ།
མཚན་ནི་ཟླ་བ་སྦྱས་ཞེས་བྱ།
ཟླ་བའི་རིགས་ལས་དེ་སྐྱེས་སོ།།

(Kangyur, Mdo, Vol. V., Leaf 292-293, A.S. MSS.)

The above passages may be translated thus :—

"My mother is Vasumati, my father the Brahman named Prajāpati; I belong to the same clan as Kātyāyana; my name is Jina, the passionless one, I was born at Campā. Somagupta sprung from the Lunar race is (in fact) my father and he my grandfather too."

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[1] The orig. is **विजितो** which should be **विरजो** for the Tibetan equivalent is རྡུལ་མེད།

[2] The meaning of this line is not clear.

In the tenth chapter Buddha in a prophetic style predicts certain future events which help us in determining the approximate date of the work. Thus he says :—

मयि निर्वृते वर्षशते व्यासो वै भारतस्तथा ।
पाण्डवाः कौरवा नन्दा पश्चात् मौरी भविष्यति [1] ॥
मौर्य्या नन्दाश्च गुप्ताश्च ततो म्लेच्छा नृपाधमाः ।
म्लेच्छान्ते शस्त्रसंक्षोभः शस्त्रान्ते च कलेर्युगः ॥

(A.S. MSS., Leaf 142.)

The Tibetan version runs thus :—

མྱ་ངན་ང་འདས་ལོ་བརྒྱན།

རྒྱ་དང་ཁྲར་འཕེལ་དེ་བཞིན་དུ།

བཎ་ཊ་བ་དང་ཀོ་ཨུ་ར་བ།

དགའ་བོའི་འོག་ཏུ་མོ་ཨུ་རི་འབྱུང་།

མོ་ཨུ་རུ་དགའ་བོ་སྦས་འོག་ཏུ།

ཀླ་ཀློའི་རྗེས་ལ་མཚོན་གྱིས་འཁྲུག།

མཚོན་གྱི་རྗེས་ལ་རྩོད་དུས་སོ།།

(Kangyur, Mdo, Vol. V., Leaf 292, A.S. MSS.)

The passage may be translated thus :—

"One hundred years after my Nirvāṇa, Vyāsa, the author of the Mahābhārata, will flourish. Then the Pāṇḍavas, Kauravas, Nandas and Mauryyas will arise. The Nandas, Mauryyas, Guptas and the Mlecchas, the vilest of kings, will flourish in succession. The Mleccha rule will be followed by tumult of arms and the tumult will be followed by Kali-yuga."

Several non-Buddhistic sects are mentioned thus :—

सांख्या वैशेषिका नग्ना विप्राः पाशुपतास्तथा ।
असत्सद्दृष्टिपतिताः विविक्तार्थविवर्जिताः ॥

(A.S. MSS., Leaf 135.)

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[1] The Sanskrit manuscript reads वामपश्चात् शौरी which is evidently wrong. The correct reading has been restored from Tibetan.

"The Sāṃkhyas, Vaiśeṣikas, Nagnas, Vipras and Pāśupatas have taken the extreme views of permanence and non-permanence and are destitute of the discriminated truth."

The views of Kapila and Kaṇāda are specially discussed on leaf 132.

Not merely in the 10th but in some of the previous chapters too the Naiyāyikas and Tārkikas are specially referred to. Thus in Chapter II we read :—

नैयायिकाः कथं ब्रूहि भविष्यन्ति अनागताः ।

(A.S. MSS., Leaf 11.)

The Tibetan version runs thus :—

སྐྱེ་བ་རྣམས་ཀྱང་ཇི་ལྟ་བུར།

མ་འོངས་དུས་ན་འབྱུང་བ་གསུངས།

"Tell me how in future times the Naiyāyikas will flourish."

The very first question asked by Mahāmati in Chapter II is :—

कथं हि शुध्यते तर्कः कथं तर्कः प्रवर्त्तते ।

(A.S. MSS., Leaf 11.)

The Tibetan version runs thus :—

ཇི་ལྟར་རྟོག་གེ་རྣམ་དག་འགྱུར་།

རྟོག་གེ་ཅི་ཡི་སྒྲད་དུ་འབྱུང་།

(Kangyur, Mdo, Vol. V., Leaf 93, A.S. MSS.)

"How is ratiocination corrected and how does it proceed?"

The following doctrine of the Tārkikas is specially mentioned :—

कृतकस्य विनाशः स्यात् तार्किकाणामयं नयः ॥

(A.S. MSS., Chap. X., Leaf 143.)

The Tibetan version runs thus :—

བྱས་ན་རྣམ་པར་འཇིག་པར་འགྱུར།

འདི་ནི་རྟོག་གེ་ཅན་གྱི་ཚུལ།།

"Whatever is *Kṛtaka* (produced) is destructible, this is the view of the Tārkikas."

According to the peculiar calculation of the Nepalese Buddhists, the Laṅkāvtāra consists of 3,000 verses. So it is stated :—

कात्यायनसगोत्रोऽहं शुद्धावासाद् विनिःसृतः ।
देशेमि धर्म्मसत्त्वानां निर्वाणपुरगामिनम् ॥
पौराणिकमिदं धर्म्ममहमन्ये तथागताः ।
त्रिभिः सहस्रैः सूत्राणां निर्वाणमिति देशयेत् ॥

(A.S. MSS. Leaf 141.)

"I belong to the clan of Kātyāyana, I am come from the S'uddhāvāsa heaven; I teach men religion leading to the City of Nirvāṇa. This religion is an old one. I and other Tathāgatas teach this religion by means of 3,000 Sūtras (verses)."

Kātyāyana to whose clan the author of the Laṅkāvatāra belonged, seems to have been the same person who composed the Hindu socio-religious institute called Kātyāyana Dharma Sūtra, for Kātyāyana is mentioned along with Yājñavalkya thus :—

कात्यायनः सूत्रकर्त्ता याज्ञवल्क्य[1] स्तथैव च ।

(A.S. MSS., Chap. X., Leaf 143.)

The Tibetan version runs thus :—

ཀ་ཏྱ་ཡ་ན་མདོ་བྱེད་པ།
མཆོད་སྦྱིན་བལ་ཀ་དེ་བཞིན་ཏེ།།

(A.S. MSS., Kangyur, Mdo, Vol. V., Leaf 293.)

"Kātyāyana is an author of Sūtra, so also is Yājñavalkya."

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[1] The Sanskrit manuscript reads यज्ञवर्षे। The reading याज्ञवल्क्य is restored from Tibetan.

20. *Tibet under her Last Kings* (1434—1642 A.D.)—*By Rai* Sarat Chandra Das, *Bahadur*, C.I.E.

About eighty years after Ta*h*i Situ Chyañ Chub Gyal-tshan's annexation of Tsang to the Goverment of Central Tibet, one of the Governors under the Phagmodu Rulers named Rinpûng-Norzang, a native of Tsang, caused a rising of the people against the Phag-mo-du authorities, and from the year *tree-hare* of the 7th Cycle, the *Shikha* (towns) of Rinpûng and Samdub-tse (modern Shiga-tse) passed under the authority of Kun-zang Don-dûb-dorje, the two sons of Rinpûng Norzang. They established their power over the whole of Tsang in the year 1434, but nominally acknowledged the supremacy of the Phagmodu Chief. From the year *Earth-tiger* of the 8th Cycle, the Government of Central Tibet had to contend with internal dissensions both in the north and south of Û for which Mi-wang Ne*h*u-dong-pa, the Ruler of Phagmodu, removed his residence to Dansa-thil, the seat of the Phagdu hierarchy. In the year *Iron-ox*, the son of Kunzang named Don-yo-dorje, who was also called Rinpûng Deba Gar-wa, inviting the *Karma* heirarch Choi-tog Gya-tsho of the *Shwa-mar* (Red-Cap sect) invaded Û with ten thousand troops. He drove away Miwang Ne*h*u-dóng-pa from his capital, and took possession of it. In this connexion, it is stated, that though the hierarch of Gahdan had twice tried to turn the tide of victory towards the Ruler of Ne*h*u-dong-tse by propitiating some spirits yet the *Karma-pa* hierarch, his adversary, by superior exorcism made Rinpûng-pa victorious at the end. This heralded the triumph of the *Shwa-mar* (Red-Cap Church) over the Yellow-Church. Thereafter, for suppressing the growing power of Sera and Dapûng monasteries, two monasteries of the Red and Black Cap sects of the *Karma-pa* school were erected under Rinpûng-pa's auspices. This was done with a view to make Sera and Dapûng, the two great Yellow-Church monasteries, to die a natural death for want of support either from the State or from the pious. The *Karma-pa* and *Dûg-pa* sects sent troops to overpower some of the smaller Yellow-Church institutions which, thereby, became converted to the Red-Cap Church. Some of the land endowments of Sera and Dapûng were taken away from them, for which reason the breach between the rival schools became wide. From the year *Earth-ox* to that of *Earth-tiger* in the 9th Cycle, the Lamas of Sera and Dapûng were prevented from taking part in the Monlam Chenpo of Lhasa. But since the year *Fire-dog*, Miwang Ne*h*u-dong-pa, the Chief of Ne*h*u-dong-tse recovered his authority to some extent over the province of Û. Again in the year *Fire-bird* (about 1508) during Gedûn Gyatsho's residence at Methog Thang of Gyal, the Digong-pa Lamas brought troops from Kong-po for crushing down the power of the Yellow Church. When they were about to demolish the outer Dsong (fort) of *H*olkha, the Chief Nangso Don-yod of Dohdah came with his troops for rescuing it. The Digong-pa

Lamas failing to destroy the Dsong, diverted their attention towards Lüng Shoi, *H*od-na, and other places where they succeeded in converting eighteen Gelug-pa (Yellow-Church) institutions into Red-Cap school. In the year *Water-ox* the Yellow-Cap Lamas also sent troops to Kyor-lûng and other places under the *Kahgyud-pa* authorities. In this manner the Lamas of the different sects and schools became involved in civil dissensions. During this period the state of affairs in Tibet resembled the dark days which had followed the successsion of the apostate Langdarma to the throne of Tibet.

The Chiefs of Tsang, who held office under the Phagmodu Rulers of Central Tibet, frequently led their troops to Û to harass the people. They sometimes retired to their own strongholds after defeat, but often quietly annexed parts of their master's territories to their possessions. The Lamas of the Yellow Church struggled for power and to establish their supremacy over Tibet, in which act they met with reverses on account of the powerful help which the Chief of Tsang had given to the Lamas of *Shwa-mar* sects.

In the year 1564, Tshe-wang Dorje, the chief representative of the house of Rinpûng,[1] with his son Padma-Karpo held the fort of Samdub-tse, and having brought the whole of Upper Tsang under his power, declared himself Tsang-toi Gyalpo, the King of Upper Tsang. In the year 1569 (*Iron-horse* of the 10th Cycle) the authorities of Digong fought with those of the monastery of Tag-lûng. In the year *Water-serpent*, there was a rebellion at Kyid-Shoi against the Phagmodu authorities. The Dalai Lama, Gedun Gyatsho, interceding in the affairs brought upon an agreement between the ruler and the ruled. Again afterwards, in the year *Tree-hog* (1574) Rinpûng-pa brought his troops to Kyid-Shoi for creating disturbances, but they were compelled to withdraw from there after they had caused some injury to the people. In the year *Iron-serpent* (1580) internal dissensions again raged in Digong. On Dalai Yontan Gyatsho's return from Mongolia, the *Shwa-mar* hierarch, N̂ag-wang Choitag, complimented him with a letter written in verse; but some misapprehension having arisen as to its concealed meaning, Rab Byampa Geleg Lhûndûb and others sent a discourteous reply to it couched in terms which were interpreted as conveying insult to the hierarch. This incident, unfortunately, raked up greater bitterness in the strained relations between the two rival Buddhist Churches of Tibet.

The King of Upper Tsang, with the help of a few petty chiefs of the south and north, incited the N̂a-wa Rong people to rebellion, in quelling which, the resources of the Government of Central Tibet were greatly exhausted. Taking advantage of this disturbance he asserted his independence.

In the year *Tree-serpent* heading the troops of the Red and Black-cap Lamas of the *Karma-pa* School, he attacked the military encampment of Deba Kyid-Shoi and killed a large number of Dûngkhors (civil officers) of the Government. On this occasion the *Karma-pa* Lamas became exultant and made a metrical rejoinder to the Dalai Lama's reply by placing their letter before the image of Buddha in the Cathedral of Lhasa. This step, which was meant to be an appeal to show that the *Shwa-mar* hierarch's welcome to the Dalai Lama was sincere, produced disastrous effects. It induced the Yellow-Cap Lamas to invite the help of the Mongolian hordes. About the time that Sonam Namgyal was Deba of Kyi-Shoi, several thousands of Tartar horsemen had already come to Tibet and encamped in the neighbourhood of Lhasa. In the year *Iron-dragon* (1609) the *Karma* hierarch named Phuntshog Namgyal, with his son *Karma* Tan Kyong Wang-po, led the Tsang army to Û, but finding that the Mongol horsemen, that had come to protect the Yellow Church, were waiting for an action, out of fear they quietly withdrew. In the year *Water-mouse* (1611) he brought the whole of Tsang including Gyal-Khar-tse (modern Gyang-tse) and Byang (northernmost province of Tsang) under his power, and became known as Tsang Gyal, *i.e.*, King of Tsang. This was the first instance in which a *Karma* hierarch had marched at the head of a victorious army, having betaken himself to worldly life, and become lord temporal and spiritual.

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[1] Rinpûng or Rinchenpun̂g, a small town in the Tsang Rong district. It contained a huge image of Maitreya famous under the name of *Rong-Cham-Chen.*

Later on, again invading Û with the Tsang army, he took possession of Ne*h*u Dong and all the lands, and some of the smaller monasteries of Û. In the seventh month of the year *Earth-hare* (1617), resolving to entirely demolish the Yellow-Cap Church he beseiged Sera and Dapûng and killed many thousand monks. He expelled the Yellow-Cap Lamas from Lhasa. In their discomfiture the Lamas took shelter at Tag-lûng. In the year 1619, that is, shortly after the humiliation of the Yellow-Cap Church and its patron Miwang Ne*h*u Dong-pa, the Mongolian army arrived and met the Tsang army first at Kyang-thang-gang near Lhasa, and ultimately at Tsang-Gyadthang-gang and completely routed them. In the seige of Lhasa, which followed this success of the friends of the Yellow-Church, about 100,000 Tsang men were captured. They all would have been killed had not the Panchen Rinpoche (Tashi Lama of Tsang) timely interceded and procured their release. The monasteries of Sang-ṅag Khar and others, besides many Lamas of the Yellow Church that had been taken over to the Red-Cap Church, were restored in 1620 to the Yellow-Church, which got back its lost territorial endowments as well. The king of Tsang and his friend the valiant *Karma* hierarch failing in their military enterprize in Tibet, sought for help from the Mongolian Chiefs who were devoted to the Red-Cap Church. It took them nearly twenty years to consolidate their power in Tibet after the retirement of the Mongolian hordes from Tibet. When they had again grown powerful they began persecuting the Yellow-Church with greater animosity than before.

21. *Note on a Decomposition Product of a Peculiar Variety of Bundelkhand Gneiss.*—*By* C. A. Silberrad, B.A., B.Sc., I.C.S.

During the construction of the Ken Canal, my attention was called by the Executive Engineer in charge of the work, to a peculiar soft, white, clayey material found in the low hill on and around which the village of Deora-Bhāpatpūr in the Ajaigarh State is built. The hill is one of the low gneissic hills characteristic of this part of Bundelkhand (*vide* Medlicott and Blandford's 'Geology of India,' Volume I, page 11, *et. seq.*), but appears to be of a somewhat unusual variety of gneiss and one more than usually liable to decomposition. At several places on the sides of this hill, all about half-way up, small pits have been dug into it, and a white clayey material found, which is locally used as "white wash." The same material has been found about 1½ miles south of this in the course of excavating a deep cutting (up to 50 feet deep) for the canal. Both positions are within three or four miles of the head works of the canal, and some ten miles west by south of Ajaigarh town; they are about eight miles northwest from the Vindhyan scarp.

I accordingly obtained some samples and sent them to my brother, Dr. O. J. Silberrad, Ph.D., Research Chemist to the War Office Explosives Committee, who examined them, and through the kindness of a friend had them tested at a pottery as regards the suitability of the clay for the manufacture of earthenware or other pottery. To them I am indebted for all the following information :—

The report is subjoined. Beside the figures showing the results of the chemical analysis, I have added those of Pinite as given in Dana's Mineralogy, which appears to be a somewhat similar material. The occurrence of Titanic Acid in the clay is, however, of interest.

" *Report on Clay from Deora-Bhāpātpūr.*

Analysis of clay is as follows:—

		Clay from Deora-Bhapatpur.	Pinite.
Silica	SiO_2	44·40°/o	49·11
Alumina	Al_2O_3	30·47	29·00
Lime	CaO	·61	·51
Magnesia	MgO	2·89	1·07
Ferric Oxide	Fe_2O_3	6·17	9·13
Potash	K_2O	8·05	6·84
Soda	NaO_2	...	·42
Titanic Acid	TiO_2	0·54	...
Combined water and organic matter	......	6·14	4·01
Moisture		1·10	
Phosphoric Acid	P_2O_5	·091	...
		100·461	100·09

The clay was tested for its capacity of forming a china or earthenware in the following manner :—

1. About 20 grams of the dry clay was mixed with sufficient water to give a plastic clay, which was moulded into the form of a triangular pyramid. This was dried at 100°, then baked for $3\frac{1}{2}$ hours in a gas muffle, at a temperature of 890°. The resulting mass was pink in colour, easily broken, possessed little cohesion, was soft and friable.

2. Another portion of the clay was mixed with calcium carbonate, in proportion to give a mixture containing $2^{\circ}/_{0}$ added calcium carbonate (19·6 grams clay, ·4 grams $CaCO_3$). This was moistened, kneaded, and the resulting plastic clay formed into a pyramid as before. This was dried at 100°, and heated in a blast muffle, together with the pyramid used in the first experiment (made from clay alone). Pyramids charged into cold muffle and muffle lit at 9-10 A.M., on 8th November, 1904.

Temperature at	11-10 A.M.	...	1155°
,,	,, 12 noon	...	940°
,,	,, 12-30 P.M.	...	1150°
,,	,, 1 P.M.	...	1300°

Heating was then discontinued as one of the pyramids was seen to be sinking, the result of incipient fusion. The muffle was turned out at 1 P.M. Pyramids drawn at 2-15 P.M., and broken.

Clay alone.—Pyramid had sunk considerably. Was smooth, glazed, dirty brown on the outside. The fracture was highly porous and cindery. Heated to a temperature as high as this (1300°), the clay would not be of any use as earthenware.

Clay + $2_{0}/^{\circ}$ $CaCO_3$.—The surface of the pyramid was smoother and more highly glazed than that of pyramid just described, and the mass had sunk more, indicating that the clay mixed with $2_{0}/^{\circ}$ $CaCO_3$ is more fusible than the clay alone. The colour of the exterior was dark brown. A fracture showed a porous, spongy layer under the surface, then a more compact, blue-black central mass. Useless as earthenware.

3. The earth was made into a plastic clay as before, without any admixture (except water) and formed into a pyramid, and a small dish. These were dried at 100°, charged into cold muffle, and muffle lit at 9-15 A.M., on 9th November, 1904.

Temperature at	11 A.M.	...	1030°
,,	11-30 ,,	...	930°
,,	11-50 ,,	...	1050°
,,	12-25 P.M.	...	1060°
,,	1 ,,	...	1090°
,,	1-30 ,,	...	1130°
,,	2-15 ,,	...	980°
,,	3 ,,	...	950°
,,	3-30 ,,	...	1130°
,,	4-15 ,,	...	1070°

Temperature at	5 A.M.	1090°
„	5-25 „	1050°

Muffle turned out at 5-30 P.M. Pieces drawn at 9 A.M. on 10th November, 1904. They had not altered in shape, and showed no signs of fusion. They were glazed on the surface, dark brown in colour. Were dense and hard, giving a metallic ring when struck. The fracture showed the pieces to be solid, not porous at all, and was somewhat glassy. The pieces were strong and required a sharp blow to break them.

4. Pyramids were made in the manner previously described, containing respectively 5°/₀ $CaCO_3$ and 10°/₀ $CaCO_3$ (19 grams clay + 1 gram $CaCO_3$, and 18 grams clay + grams $CaCO_3$). They were dried at 100°, charged into cold muffle, and muffle lit at 9-20 A.M., 9th November, 1904.

Temperature at	11 A.M.	930°
„	11-30 „	890°
„	11-50 ..	910°
„	12-25 P.M.	920°
„	1 „	930°
„	1-30 „	930°
„	2-15 „	940°
„	3 „	930°
„	3-30 „	930°
„	4-15 „	900°
„	5 „	870°
„	5-25 „	860°

Muffle turned out at 5-30 P.M. Pieces drawn at 9 A.M., 10th November, 1904.

Identical results were given by both pyramids. They were pink, not glazed, of only moderate hardness, easily broken, giving a dull fracture. Apparently not strongly enough heated to give a satisfactory earthenware.

The two pyramids were recharged into cold muffle, and muffle lit, at 9-10 A.M., 10th November, 1904. The temperatures were taken with a thermo-couple (all the previous temperatures having been taken in this way) and also with the Wanner Optical pyrometer. The corresponding readings are given below.

		Thermo-couple.	Wanner-Pyrometer.
Temperature at	11 A.M.	1040°	...
„	11-30 A.M.	970°	...
„	12 noon	1090°-1100°	1087°

		Thermo-couple.	Wanner-Pyrometer.
Temperature at	12-30 P.M.	1110°-1130°	1132°
„	1 P.M.	1090°-1100°	1108°
„	2-15 P.M.	1040°-1050°	1052°

When two thermo-couple temperatures are given for the same time, they refer to different points in the muffle.

Muffle turned out at 2-20 P.M. Pieces drawn at 3 P.M.

Pyramid with 5°/$_0$ $CaCO_3$.—This was a dark, coloured, hard, dense mass, glazed on the surface though not so much as the pyramid made from the clay alone, and somewhat lighter in colour. No change of shape could be detected, and there were no signs of fusion. The fracture was glassy in parts, the rest being dull and stony, and was blue to brownish-black.

Pyramid with 10°/$_0$ $CaCO_3$.—This was much lighter in colour than the two previous pieces, was light brown, dull, not glazed. Was not so hard or dense as the Pyramid with 5°/$_0$ $CaCO_3$. The piece was easily broken, giving a dull, sandy fracture, and showing the interior to be fairly compact. The colour of the fracture was a brownish pink. The pyramid had not sunk at all, and showed no signs of fusion.

The best results as regards the making of earthenware appear to be given by employing the clay alone, without any admixture of lime. The addition of lime in small proportions reduces the melting point. The hardness and density of the ware depend on the temperature to which it has been heated. If that temperature has been too high, the upper parts of the pieces are porous and cindery, this probably being due to the liquation of a fusible silicate. The colour of the ware is necessarily dark, owing to the high percentage of oxide of iron in the clay.

It does not appear to be possible to obtain good earthenware from the clay. Experiment III gave the best pieces.

The clay is evidently not Fuller's earth.

When mixed with water, with, or without additional lime, a highly plastic clay is obtained."

In addition to the experiments recorded in the above report, the clay was fired in an ordinary earthenware kiln, but it refused to bind and simply dried to a porous friable mass differing very little from the product obtained by merely moistening it and letting it dry at an ordinary temperature. Heated in an electric furnace to a temperature of about 2900°C the clay melted to fluid which could be easily poured or cast.

From the foregoing it will be seen that the clay is little likely to be of any use except that to which the villagers have put it from time immemorial, *i.e.*, for whitewashing their houses.

22. *Additions to the Collection of Oriental Snakes in the Indian Museum.—Part 2.—Specimens from the Andamans and Nicobars.—By* NELSON ANNANDALE, B.A., D.Sc., *Deputy Superintendent of the Indian Museum.*

All the snakes recorded or described in this communication are from the Andamans or the Nicobars. With one exception, they have been collected and presented to the Museum either by Major A. R. Anderson, I.M.S., or by Mr. C. G. Rogers. The one exception is the type of a new Sea-Snake, which was taken by the Indian Marine Survey. Mr. G. A. Boulenger has kindly examined several of the other specimens. I am much indebted to Major Anderson for several letters on the snakes of the islands. I have added a revised list of the species known to occur in the two archipelagoes or represented from them in the Indian Museum, having re-examined the specimens recorded by Mr. W. L. Sclater in all cases in which there was any doubt.

TYPHLOPIDÆ.

TYPHLOPS BRAMINUS (Daud.)

This is evidently the common species in the Andamans, or at any rate in the neighbourhood of Port Blair. Major Anderson has lately sent us twenty-four very dark specimens from that station.

The type of *T. andamanensis* still remains unique, if it is in existence. I have not been able to trace its history. The Museum does not possess examples of *T. oatesii*, described from the Cocos group.

COLUBRIDÆ.

LYCODON AULICUS (Linn.)

We have lately received several specimens of this common Indian species both from the Andamans and the Nicobars. One from the Nicobars belongs to var. E of Boulenger's "Catalogue:" those from the Andamans to var. C, a common form in Ceylon.

OLIGODON WOODMASONI (Scl.)

Simotes woodmasoni, *Sclater. J.A.S.B.*, (2) LX, p. 235; *List. Snakes*, p. 24.

A young specimen, lately received from Major Anderson, has been submitted to Mr. Boulenger, who regards it as belonging to the genus *Oligodon* I have compared it with Mr. Sclater's types, with which it is identical. Mr. Boulenger notes that it is nearly related to *O. trilineatus*, a Malayan species.

COLUBER MELANURUS, Schleg.

A specimen from the Andamans has the entire dorsal surface of the head and body of an almost uniform dark plumbaceous grey. The markings on the side of the head and on the neck are, however, quite distinct, and the individual is otherwise normal. We have in the Museum a similar specimen from Borneo.

DENDROPHIS PICTUS (Gmel.)

A specimen has been sent by Mr. Rogers from Henry Lawrence Island, Andamans. The species appears to be common all over the Andamans and Nicobars. Some of the Andaman specimens, are very dark in colour, but this character does not seem to be constant.

TROPIDONOTUS PISCATOR (Schneid.)

We have lately received a specimen from the South Andamans, while we had already a number from several localities in the archipelago. I have not been able to find any record of the occurrence of this common Indian species in the Nicobars.

TROPIDONOTUS NICOBARENSIS, Scl.

T. nicobaricus *Sclater*, *J.A.S.B.*, LX (2), 1891, pp. 231, 250.
T. nicobarensis, *id.*, *ibid*, p. 241.
T. nicobariensis, *Boulenger*, *Cat. Snakes*; p. 192.

The type of this species still remains unique. I have examined it very carefully, dissecting out the maxillary on one side, and have no doubt that Mr. Sclater was right as to its generic identification. The maxillary teeth, 24 in number, increase slightly from before backwards, and show no signs of being stunted posteriorly; but the division of the anal plate appears to me to have been traumatic. If the species is identical with Cope's *Prymnomiodon*, the latter must have been founded on an individual injured or abnormal as to its dentition. This seems possible, as the type was otherwise deficient.

DIPSADOMORPHUS CEYLONENSIS, Gthr.

Mr. Rogers has presented two specimens from the South Andamans. The snakes from Assam and the Andamans identified by Mr. Sclater as *Dipsas fusca*, are young individuals of this species.

DISTIRA ANDAMANICA, sp. nov.

Head moderate, hardly separated from the neck; the greatest depth of the latter half that of the body; body deep, strongly compressed; tail short. Rostral much broader than deep; nasals shorter than frontal, three times as long as the suture between the præfrontals; frontal not much longer than broad, shorter than distance from rostral, much shorter than parietals; one præocular, very large; 3 postoculars; no loreal; 2 large, superimposed anterior temperals; 7 upper labials, 3rd and 4th entering eye; two pairs of sub-equal chin shields, the posterior pair separated from one another by two rows of scales. Head scales smooth for the most part, but with a few minute, irregularly placed pits. Eyes large and prominent. Body scales imbricate, but feebly so or not at all posteriorly, with a very short keel or a tubercle; 31 scales round neck, 39 round body; ventrals distinct, bituberculate, with a central longitudinal groove, occasionally divided, 238 (in the type) in number. *Colour*.—pale-yellow on sides and belly, with about 40 large, black rhomboidal marks on the dorsal surface. These are not in contact either above or below, reaching about half way down the body on the neck and tail and almost to the ventral margin of the tail. Throat and chin darker yellow, the former feebly irrorated with black. Dorsal surface of the head pale-green as far backwards as the posterior border of the præfrontals and of the 2nd supraocular, black posteriorly.

Measurements of type—

Total length	30 inches.
Length of tail	2¾ „

A single female from the Andamans. Judging from its bold coloration, this specimen is immature. In many respects the species resembles *Enhydris curtus*, from which it may be distinguished superficially by the possession of unbroken parietals and distinct chin shields. It has six grooved teeth posterior to the large poison fangs in each maxilla. Its nearest ally is *D. lapemidoides*.

SNAKES OF THE ANDAMANS AND NICOBARS.

NAME OF SNAKE.	Andamans.	Nicobars.
Typhlops braminus§‖ (Dand.)	×	—
Typhlops oatesii,* Blgr.	×	—
„ *andamanensis*.* Stol.	×	—
Python reticulatus,§‖ Schneid.	—	×
Lycodon aulicus§‖ (Linn.)	×	×
Polydontophis sagittarius§‖ (Cant.)	—	×
„ bistrigatus‖ (Gthr.)	—	×
Ablabes nicobarensis.* Stol.	—	×
Oligodon sublineatus, D. & B.	—	×
„ woodmasoni* (Scl.)	×	×
Zamenis mucosus§‖ (Linn.)	×	—
Coluber porphyraceus, §‖ Cant.	×	—
„ melanurus§‖ (Schleg.)	×	×
„ oxycephalus,§‖ Boie	×	×
Dendrophis pictus§‖ (Gmel.)	×	×
Tropidonotus stolatus§‖ (Linn.)	—	×
„ piscator§‖ (Schneid.)	×	—
„ nicobarensis,* Scl.	—	×
Chrysydrus granulatus §‖ (Schneid).	×	—
Dipsadomorphus hexagonatus (Blyth)	×	—

NAME OF SNAKE.	Andamans.	Nicobars.
Dipsadomorphus ceylonensis,||[1] Gthr.	×	–
Chrysopelea ornata§||[2] (Shaw)	(Narcondam)	–
Cerberus rhynchops§ (Schneid.)	×	×
Fordonia leucobalia §|| (Schleg.)	–	×
Bungarus cæruleus §|| (Schneid.)	×	–
Naia tripudians,§|| Merr.	×	–
,, bungarus,§|| Schleg.	×	–
Platurus colubrinus§|| (Schneid.)	×	×
Distira andamanica,* Annand.	×	–
Hydrus platurus§|| (Linn.)	–	×
Amblycephalus monticola|| (Cant.)	–	×
Lachesis cantoris* (Blyth)...	×	×
,, gramineus§|| (Shaw)	×	×
,, purpureomaculatus§|| (Gray)	×	×

In the above list, the names of those snakes which are not represented in the Indian Museum by specimens either from the Andamans or from the Nicobars are printed in italics. In the first column a * indicates that a species is peculiar to the Andamans, the Nicobars or both archipelagoes; a § that it has been recorded from the Malay Peninsula south of the Isthmus of Kra; a || that it is known from Assam or Burma. In the other columns, a × shows that a species is known to occur, a – that specimens have not been taken.

It will be seen from this list that the Ophidian fauna of the islands has close affinities with that of Burma and Malaya, while there is possibly a less obvious connection with Ceylon. So far as we know, three species are peculiar to the Andamans, two to the Nicobars, and two to the Andamans and Nicobars together; but our knowledge is still extremely limited, especially as regards the smaller snakes of the Nicobars.

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[1] *Dipsas fusca* (Gray) *apud* Sclater, *List Snakes*, p. 47.

[2] Major Anderson has taken a specimen (var. A) on Narcondam.

23. *History of Nyāyaśāstra from Japanese Sources.—By* MAHĀMAHOPĀDHYĀYA HARAPRASĀD SHĀSTRĪ.

The bibliography of Nyâyaśâstra of the Orthodox Hindus is a very short one. It consists of :—

(1) The Sūtras attributed to Gautama or Akṣapāda.
(2) Bhâṣya attributed to Vātsyâyana.
(3) Vārtika by Uddyotakara.
(4) Tātparyaṭīkā by Vācaspati.
(5) Pariśuddhi by Udayana.

But the bibliography of the Buddhist Nyāyaśāstra, as known in China and Japan, is a long list. It attributes the first inception of the Nyāyaśāstra to Shok-mok or Mok-shok which, transliterated into Sanskrit would be Akṣapāda.

The second author who treated of Nyāya is said to be Buddha himself. The third is Ryuju, who is said to have preached the Mahāyāna doctrines of Buddhism with great success. His Hoh-ben-shin-ron is one of the polemical works against heretics. It contains one volume on logic. The fourth is Mirok (Maitreya). The fifth Muchak (Asanga), Mirok's disciple. Muchak's younger brother Seish (Vasubandhu) wrote three books on Logic—Ronki, Ron-shi-ki, and Ron-shin. After Vasubandhu, came Maha Diṅnāga and his disciple Saṅkarasvāmī, whose works were translated into Chinese, by the great Hienth Sang. Hienth Sang had two great disciples—Kwei-ke in China, and Doh-Soh in Japan. Kwei-ke's "Great commentary" is the standard work on Nyāya in China and Doh-Soh is the first promulgator of Buddhist doctrines and Nyāya Sāstra in Japan. Since then there had been many distinguished teachers of Nyāya both in China and in Japan, and up to the present day Diṅ-nāga has a firm hold on the learned people both in China and Japan. The European system of logic is a very recent introduction in Japan, where Diṅ-nāga is still studied.

In the two paragraphs given above, I have tried to give the bibliography of Brahmanic and Buddhistic logic of ancient India. Both attribute the invention of the science to one person, namely, Akṣapāda. The only clue given about this personage's chronology is that it was before Buddha. But no clue of his time can be found in Brahminical works. Mr. Justice Pargiter tells me that there is no such person as Akṣapāda mentioned in the Mahabharata, which was in a nascent condition about the time of Buddha's birth. The Chinese attribute to him two things, namely, "Nine Reasons" and "Fourteen Fallacies," while the Hindus attribute to him the entire body of Sûtras divided into five Adhyāyas, ten lectures, eighty-four topics, five hundred and twenty-eight sūtras, seventeen hundred and ninety-six words, eight thousand three hundred and eighty-five letters. It may be said, in passing, that the Chinese people are doubtful about the "Nine-Reasons" being attributed to Akṣapāda. It may also be remarked that in the whole body of Sūtras, there is nothing which corresponds to the "Nine Reasons" and "Fourteen Fallacies," which, we know from Chinese sources, and which even Diṇ-nāga is said to have attributed to Soc-mock. An examination of the "Nine Reasons" reveals the fact, that it is historically prior to the invention of syllogism. It means an effort of the human mind to exhaust all possible forms of the relation between, what is now called the Major Term and the Middle Term of a syllogism. And such an examination must precede the formulation of syllogism. In what light the later writers have seen this examination, and what conclusions may be drawn from it, need not trouble us here. Suffice it for a historical student to know, that this early effort is attributed to Soc-mock, universally known as the first writer on Nyāya. The theory of "Fourteen Fallacies" too, in their crude and undeveloped shape, shows signs of greater antiquity than the Nyāya Sūtras.

These two theories of Akṣapāda seem to have been the common property of Indian pandits before Buddha's time, as Buddha did not scruple to take advantage of these.

The "Nyāya Sūtras," as we have them, seems to be a much later production. Haribhadra, a Jain scholar of the 6th Century A.D., says that it is a sectarian work; that the sect, which either composed it or adhered to it, was a Saiva sect. Now a Saiva or Mahesvar sect existed long before Buddha. Soc-mock and the eighteen gurus of the sect, Nakulisha and others, might have belonged to this sect. That the Sūtras were not composed by Akṣapāda appears to be almost certain. But it bears his name. How to explain this fact? The only explanation is that it belonged to that sect, of which he was thought to be one of the earliest representatives. I am not sure if the work "Nyāyasūtra" had not gone through several redactions before it assumed its present shape. But it is pretty sure that from the time of Soc-mock to the period when the Nyāyasūtras were reduced to their present form, India was full of polemical writings, much of which has perished.

Though we know nothing from Brahmanical sources of the process of the development of Nyāya, we know some stages of this development from the Buddhists. Nāgārjuna and Maitreya wrote on Nyāya. In fact one of the volumes, I believe, the fifteenth of the great polemical work by Nāgārjuna on Upāyakauśalya is devoted to the exposition of Nyāya. Maitreya, Asanga and Vasubandhu —all wrote on Nyāya. Then came the great Diṅ-nāga, the disciple of Asanga, whom the Japanese place between 400 to 500 A.D., and Kern between 520 and 600.

But in the meanwhile on the Brahminical side the Sūtra has been reduced to its present shape and a Bhāṣya has been composed when, nobody can say. If am permitted to hazard a conjecture, both the Sūtra and Bhāshya came after the development of the Mahāyāna School, *i.e.*, both came after Nāgārjuna and Aryadeva, say in the 2nd Century A.D. The Bhāṣyākara, Vātsyāyana, though he does not even mention the Buddhists or even any Buddhist writers, pointedly refutes all the Mahāyānists doctrines of

Transitoriness, of Void, of Individuality, and so on. Sāvara, the Bhāṣyakāra of Mīmânsā, was liberal enough to speak of refuting the Mahāyānic theory that the whole is merely a collection of parts and not in any way different from them. But Vatsāyana is not so liberal. He would not name the Buddhists. There is another Vātsyāyana, however, who flourished about this time. He may be identical with or a relation of, or at least, have belonged to the same gotra with the Nyāya Bhāṣyakara," on the supposition that families and clans rise into importance under one political circumstance and then disappear from history, both Vātsāyanas may be said to have belonged to the same epoch. That Vātsyāyana is the celebrated writer on Eratics. He mentions some scandals about the Sātavāhanas who flourished by the middle of the 2nd Century A.D. And the geographical information gleaned from his book cannot refer to a period later than the rise of the Gupta family.

We glean one historical information from the Brahmanical sources, namely, that Diṅ-nāga severely criticised the Bhāṣyakāra Vātsyāyana, and that the Vārtikakāra, who comments upon the Bhāṣya, defends Vātsyāyana's work against Diṅ-nāga.

The modern Hindu idea is that the Buddhists believed in two of the pramānas only, namely, *Pratyakṣa* and *anūmana*, *i.e.*, perception and inference. But this is not a fact, so far as early Buddhism and even early Mahāyānism are concerned. For we know distinctly from Chinese and Japanese sources that Analogy and Authority were great polemical instruments in the hands of the early Buddhists, *i.e.*, that all early Buddhists from Buddha to Vasubandhu were indebted to Akṣapāda for their pramāṇas or polemical instruments of right knowledge. Maitreya discarded Analogy, and Diṇ-nāga discarded Authority, and made Nyāya pure logic, in the English sense of the term.

The followers of Akṣapāda are sometimes called Yogins, and Yaugas, and the Buddhist tradition is that Mirock (Maitreya) introduced Yoga in the system of discriminating true knowledge from false (*i.e.*, the system of Akṣapāda), some form of Yoga. And we find that at the second lecture, fourth chapter, of the Nyāya Sūtras, there is a long section devoted to Yoga, and that Yoga is of a peculiar character. How the section on Yoga was adopted into the Nyāyaśāstra, it is is difficult to say, because Yoga does not belong to the sixteen topics which Akṣapāda, in the first sūtra, promises to expatiate upon. Whether properly or improperly introduced, it forms a part of Hindu Nyāyaśastra and also of Buddhist Nyāyaśastra. The Buddhists say that Mirok introduced it, but the Hindus cannot say who introduced it.

I reserve the result of my examination of the Nyāyasūtras for the second instalment of this paper; and I conclude this instalment with the remark that though Diṅ-nāga and the Buddhist system of Nyāyaśāstra is almost completely lost in India, so much so, that the discovery of a Tibetan translation of one of Diṅnāga's works, was regarded by scholars as a matter of congratulation, it is still studied and commented upon in China, Japan, Corea, and Mongolia. In Japan only, it has a rival in the European system. But I have been assured that the rivalry has only strengthened the position of the Hindu system. While the colleges study the European system, the monasteries study the ancient system with great zeal.

24. *Notes concerning the People of Mungeli Tahsil, Bilaspore District.* —*By* Rev. E. M. Gordon (*continued from the Journal of the Asiatic Society of Bengal, Vol. LXXIII. Part 3, No. 1, 1904*). [With one plate.] *Communicated by the Anthropological Secretary.*

B. 38. *The Measuring of Grain.*—It is a never-failing practice when a man stops measuring for him to throw a handful of grain back into the measure. On innumerable occasions, for many years, I have seen grain being measured and not once has this act been omitted or forgotten. It is considered lucky for the measure to be never empty. Much the same idea probably underlies the practice of never sweeping out the granary. This would be considered tantamount to sweeping out prosperity.

39. *Sowing Mango Seeds.*—There is a prejudice against the sowing of seeds from mangoes which have been eaten. The fruit of trees grown from such seeds would be considered impure. They would be called *jhuṭṭā*, *i.e*, false or impure. This is an adjective applied to food left over on one's plate after eating.

40. *Respect paid to Cattle which have died.*—I once noticed a few clods of earth placed on the carcass of a cow which was lying on the outskirts of the village. On inquiring as to why those clods were placed there, I was told that the owner of "a beast of burden" or other domesticated animal that has died will with due respect place a few of clods of earth on the carcass and consider that this act has taken the place of a formal burial. The carcass is then taken by the leather workers, who remove the hide, or it is thrown away at a distance to be devoured by vultures.

41. *Granaries causing Dumbness.*—I was once questioning a father regarding his child and remarked that it was late in speaking. His reply was that the child had been placed on a granary, and this was assigned as the reason for the delay in its acquiring the power of speech.

42. *The Cause of prolonged Pregnancy.*—A woman came to the Mission Hospital in Mungeli, and stated that for eleven months she had been pregnant and yet there were no signs of the approach of the expected event. In conversation the doctor learnt that there is a belief amongst the women that if one who is pregnant should step across a string by which a horse is tied, her term of pregnancy will be prolonged and she will take the term required by a mare before delivery. In order to remove the evil consequences of having crossed the rope of a horse, the woman in question must take a quantity of grain in her *sāri* and present the grain to the horse which has affected her. The horse having eaten of the grain she will be relieved of the malign influence.

43. *Wedding the Fields.*—There is a practice in connection with the sowing of fields, which I mention because of the desire of folklorists to have on record every insignificant item which is apparently of no consequence to the layman and yet may be fraught with much meaning to the specialist. After sowing the cold-weather crops, such as wheat, gram, etc., it is customary to

take the plough around the field and sow in a circular form in several rows. This may be for the purpose of covering the ground which had not been sown; but it is interesting to note that the farmers call this final sowing *bihānā*, to wed or marry. Going around the field in a circle may be associated with the circumvention of the marriage pole.

44. *The Milk Woman on the Plough.*—In sowing the cold-weather crops, the plough invariably has a mass of damp earth placed on it at the point where the handle of the plough meets the tongue. This is said to assist the plough to go deep down into the soil. But why should it be called the "milk woman"—the *Rautain?* The farmers are always greatly amused when I ask them why they call the lump of earth the *Rautain;* the term is so familiar to them that they have never asked themselves the question as to where the connection comes in with the "milk woman."

45. *A Possible Explanation of the Preceding.*—Since writing the two preceding notes I have been reading Hiawatha. In the section entitled "Blessing the Cornfields," I find the following lines. These lines are given without note or comment and the reader must judge for himself as to whether there is any connection[1] between the practice they refer to and the practices described in notes 43 and 44.

"Once when all the maize was planted,
"Hiawatha wise and thoughtful,
"Spake and said to Minnehaha,
"To his wife the Laughing Water.
"You shall bless to-night the cornfields,
"Draw a magic circle round them.
"To protect them from destruction
"Blast of mildew, blight of insect.
"In the night when all is silence,
"In the night, when all is darkness,
"Rise up from your bed in silence
"Lay aside your garments wholly
"Walk around the fields you planted
"Round the borders of the cornfields
"Covered by your tresses only.
"Robed with darkness as a garment
"From her bed rose Laughing Water.
"Laid aside her garments wholly,
"And with darkness clothed and guarded
"Unashamed and unaffrighted,
"Drew the sacred magic circle,
"Of her footprints round the cornfields."

In these lines, then, we find definite reference to a nude woman going around the borders of the cornfields for the purpose of protecting them from injury. In my notes Nos. 43 and 44, it is stated that a plough with a lump of earth called "the milk woman" is taken around the fields several times after they are sown, and this making of a circle around the field is called "wedding the fields." Is there a connection in these two practices?

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[1] [See Frazer, *The Golden Bough*, 2nd ed., vol. II, chap. III.—Ed.]

46. *Binding the Rain.*—Mr. Crooke, in his *Folklore of Northern India*, tells of various devices for binding the rainfall. In this district there is the belief that certain persons have the power to cause the rain to cease. It is said that the merchant when he has stored away large quantities of grain to be sold at a profit, will gather some rain from the eaves of the house in an earthen vessel, and this vessel filled with rain-water he will bury under the grinding mill. The consequence is that from that time forward the thunder will be heard rumbling in the distance like the grinding of a flour-mill, but there will be no more rain. I think it is said that the rain must be gathered from the eaves of a house at the *Pora* Festival.

47. *Counting and keeping Records.*—The method of enumeration followed by the most ignorant people of the district is that of counting by fives. For instance, if a man is counting fruit, he lays aside five which make one *ganda*. Four groups of five make one *kori*, and five groups of *kories* make one hundred. According to Bates' *Hindi Dictionary*, a *ganda* means four, in this district, however, it invariably means five. The great majority of the people in the district cannot count further than ten. The usual way to state high numbers is in *koris* or twenties—160 rupees is eight *kories*, and so on. Intermediate numbers are expressed as follows: 46 = six over two *kories*; 115 = five less six *kories*, and so on. The grain measures most in use are also on the same principle. Twenty *kātās* make one *khandi*, and twenty *khandies* make one *gārā*. When grain is being measured at the threshing floor, the record is kept by making one small pile of grain (a handful in quantity) for every *khandi*. When grain is given out to the labourers from the granary, the record is made on the earthen wall of the granary in cow-dung,—one stroke of the finger dipped in cow-dung means one *kātā*, when twenty strokes have been made they are crossed out and a cipher takes their place and the perpendicular strokes start again from one to twenty.

48. *Some Agricultural Practices*—(1) With regard to the sowing of linseed, there is a belief that if the seed is sown from a woollen blanket and cattle graze in a field grown from seed thus sown, the cattle will surely die. I questioned a farmer in the Damoh District on this point and found that the same belief prevails there also. (2) It is also said that if iron in any shape should come in contact with peas when they are being sown, the seeds will not germinate. An iron or metallic spoon is never used to stir the peas when they are being boiled as *dall*, for the metal will cause the *dall* to be tough and indigestible. (3) When the rice or *kodo* harvest is about to be completed and the reaper comes to cut the last sheaf, he will throw it up into the air and use some of the obscene phrases which are used in the *Holi* Festival. (4) When the grain has been threshed in the threshing

floor and the first load of threshed grain is being carried to the house to be stored, the housewife will come out to meet the labourer who is carrying the load. She has in her hand a *lota* of water, and with this she walks around the man carrying the grain and does obeisance to the grain. This respect is paid to the first load of grain only.

49. *Cause and Cure of Styes.*—There is a wide-spread belief that styes are caused by seeing a dog in the act of defœcating. And there are several remedies employed to remove a stye. One of the most common remedies is connected with the *Dalhan Pahar*, the hill which occupies such a prominent position as a geographical feature of the district. This hill may be seen at a distance of fifty or eighty miles. The peak of the hill seen at a distance just appearing above the horizon has some resemblance to a stye. The belief is that if a person suffering from a stye should face this mountain and say, "*Dalhan Pahar chotā mor sulie barā*" (the Dalhan Hill is small, my stye is big) the hill will be annoyed, the stye will be pleased, and as a result the stye will disppear. Some say that while saying these words, the afflicted person should rub the third finger of the right hand in the palm of the left hand and apply the finger to the stye. It is also customary to take a grain of the wild rice, apply it to the stye, and then throw it away. As the grain decays the stye will disappear.

50. *Saluting at Lamp-light.*—It is customary amongst the Satnamies for the menials and subordinates to salute a superior when the lamp is first lighted at dusk. I was once seated outside a tent with a number of villagers around me, when the servant lighted the lamp and placed it on the table inside the tent. Immediately all the villagers arose and said "*Satnam*" to me and then resumed their seats. Being a stranger to the people at that time, I was completely taken aback; but on inquiry I learned that this is a common practice. Now I have come to look for the salutation under similar circumstances. The entry of the lamp is considered the ushering in of a new period of time, and hence the people "wish you the time."

51. *Concerning Meeting and Entertaining.*—It is an invariable practice when relatives come together who have not met for a long while, for the womenfolk to weep and wail loudly. A son has been away for months and returns to his parents' house. He will first go and touch the feet of his father and mother. When he has been seated, the mother and sisters come to him and each in turn, placing both hands on his shoulders, weeps loudly and in a wailing tone narrates anything special that has taken place in his absence.

To a stranger it would seem that a great loss has befallen them. A daughter would be welcomed in the same way. Frequently I have mistaken the weeping of meeting for that of mourning. Experience, however, has taught me to distinguish the two kinds of wailing. When anyone goes as a guest to a friend's house, he partakes of the usual food prepared by the family. When the people who are entertaining prepare some specially good food, he takes it as a sign that his entertainment has now come to an end, and the next day he takes his departure.

52. *The Spindle and the Panchāyat.*—When a *panchāyat* or meeting of the leading men in a village is in progress, it is considered unwise to have anyone present who is twirling a spindle. It is said that as the spindle keeps revolving, so will the discussion move in a circle and fail to come to a decided issue.

53. *Vermin from the Clouds.*—There is a very prevalent belief that worms, frogs and snakes drop from the clouds. After cloudy weather, when insects appear on certain vegetables, it is said that they have dropped from the clouds. Strange as this idea may seem to us, we have a phrase which is even still more strange, for we sometimes say, "It is raining cats and dogs."

54. *Tattooing.*—This is done by the Gond women who usually travel through the district during the harvest time. The tattooing is not as elaborate as is seen in other parts of India. In fact, it appears to me to be strikingly meagre. The most common figures are those of two deer facing each other, and also the figure of a chain or part of a chain. It is said that if a woman is not tattooed in this world, she will be marked with a *Sabār* or crow-bar by the gods in the next world. A woman will on no account allow her husband to pay for any tattooing she may have done, lest he should say to her when displeased, "I have not only paid for you at our marriage, but I have paid for your tattoo marks as well." Rather than give occasion for this taunt, she will beg of a friend to pay for the tattooting she may have done after leaving her parents' home.

55. *Some Matrimonial Beliefs and Practices.*—(1) In the event of a bachelor marrying a widow, he alone goes through the marriage ceremony, for a woman never goes through the marriage ceremony more than once. The bachelor in this case would be wedded to a dagger, and the dagger will take the place of the bride throughout the ceremony. (2) If a couple should have twenty-one children, it is said that they would go through the marriage ceremony together a second time. Or if a couple should live to see a grandchild's grandchild, they will do the same. I was told that a couple in a certain village lived to see their grandchild's grandchild; and my informant claimed to have been present at the marriage ceremony which was performed. I will not vouch for the truthfulness of my informant.

56. *Lippoing.*—When a house is *lippoed*, *i.e.*, the floor plastered with cowdung, it is customary to begin at the doorway and do the plastering inwards. Never is the house *lippoed* outwards except after a death.

57. *Effects of an Eclipse.*—An eclipse, it is said, has a detrimental effect on granaries and on animal life not yet born. In order to avoid the grain in the granary losing its germinating power, a mark is made on the side of the granary with cow-dung. The same means is employed to remove the evil influence from pregnant animals. A mare would have a mark made on the side with *gobur* (cow-dung) and a pregnant woman has a mark made

on her left side. I think it is a circular mark that is made. If this precaution was not taken, the offspring would be deformed. I once met a lad on the roadside with a deformed leg. I afterwards questioned the man who accompanied me as to the probable cause of the deformity. The reply was "*Grahan khich liya*"—The eclipse has drawn it up. His meaning was that shortly before the lad was born, there had been an eclipse, which caused the deformity.

58. *Cause of another deformity.*—There is a firm belief that if one should have a sixth finger, it was caused by his having stolen garlic or *huldi* (turmeric) in the previous incarnation. So firm is this belief that gardeners have no fear of losing these vegetables from their gardens by theft. One who steals would appear in the next world with the mark of theft on his hand.

59. *Toothache, Cause and Cure.*—An insect is said to be boring in the tooth and causes the pain. In order to remove the insect, the patient is given a piece of hollow bamboo and he sits over a slow fire in which some particular leaf is burning. One end of the hollow bamboo is over the smoke rising from the fire, the other end is placed in the mouth as near as possible to the decayed tooth. It is said that the insect comes out of the tooth, falls through the hollow bamboo into the fire, and the toothache ceases. The gum of some of the Indian figs is also used to close the hollow of a decayed tooth.

60. *Anent the Holi Festival.*—Crooke in his *Folklore of Upper India* gives many interesting particulars regrading the *Holi*. I will mention only a few details observed in this locality. A heap of thorns, etc., are stacked about the first of the lunar month of *Phāgun*. This stack is made just outside the village on some open space. As the days go by and the *Holi* festival draws near, the stack of thorns and dried branches increases continually, for the boys keep adding to the heap of fuel day by day. In the centre of the stack of thorns is a high bamboo pole, to which is tied a branch of the castor plant (*Ricinus communis.*) Under the pole which stands in the centre of the *Holi* stack are some *kowries* or pice, and some turmeric. To the top of the pole is tied a sheaf of dried grass or straw. On questioning a gardener as to when he would sow a certain vegetable, he replied he would do so when the *Holi* pole (*dāng*) falls. His meaning was when the *Holi* is burnt. I find this is a common idiom—"When the *Holi* pole falls." The stack is set on fire by the village priest, who presents *hom* at the village shrine, and he is often a Gond or a *Baigā* or one of the "aboriginal tribes." The fire with which the *Holi* is lighted must be obtained from the *chak mak* or flint and steel. No other fire will suffice. Some of the ashes of the *Holi* are kept and supposed to have power in removing evil influences of spirits.

61. *The Burial of Gosais.*—On hearing of the burial of a prominent Gosai, I gathered the following information from some disinterested persons of other castes, who were present at the burial and witnessed the whole ceremony. (1) Immediately after death the body was washed and covered with moist ashes. (2) A

deep whole was dug on the bank of the tank and the body was placed in this hole in a sitting posture with legs crossed as represented in the figures of Buddha. (3) The face was toward the north. (4) The body had a *langoti*, a meagre loin cloth. (5) Another piece of cloth was cut open in the centre and the head was put through this opening in the cloth, so that the cloth rested on the shoulders. It was coloured with a red earthen dye (*geru*). See *Exod.* xxviii. 31,32, R. Version. "Thou shalt make the robe of the ephod all of blue. And it shall have a hole for the head in the midst thereof." (6) Under the shoulder was placed a *jholi* or bag of cloth, the string of which went around the shoulder. (7) The right hand was placed to the mouth and in the hand was a *chappātie* (loaf of unleavened bread) touching the lips. (8) Inside the mouth was an *udrāj* (the sacred bead which mendicants or those of the priestly castes wear around the neck. In the mouth was also a leaf of the *Bael* tree (*Ægle marmelos*). (9) By the side of the body was placed a stick such as mendicants carry and also a *kamandal* or water-vessel made from a gourd. (10) There were placed by the body a pair of wooden sandles. (11) A piece of cloth was tied carelessly around the head, and over this was placed an earthen plate turned upside down. (12) The body was then surrounded with fifteen *katas* of salt (something over a maund.) (13) When the earth had been filled in there was a *Sir* (stone image of of the Linga) placed over the grave, and the fellow-caste-men went around the grave seven times and sprinkled rice on the *Siv.* (14) Every night a lamp is lighted at the grave for one year and a *lota* of water and some rice is sprinkled over the Siv daily. In connection with this burial I should mention that a short distance (five miles) from the village (Heraspore) in which this burial took place, is another village (Dharampurā) which for many decades past has been the residence of Gosais. On the banks of the tank of this village are five different temples. I was told that each of the temples is built over the grave of a man buried as described above. My informant was able to give me the names of four of the Gosais buried there, but he said the name of the man buried under the fifth temple (certainly the oldest and now in a delapidated condition) was unknown to the village people. They had forgotten the name.

62. *Birth Practices.*—Immediately on the delivery of a child the mother has cotton stuffed into her ears. This is said to "keep out the wind." This is also done when one is expiring. There is a belief that a male child comes into the world the face upwards, and the female with the face downwards. It is said that if a male is born face downwards, he will be effeminate, and *vice-versa.* The hair is never allowed to remain knotted during delivery, and if delivery is prolonged and painful, the woman is taken into another house as it is believed the house has something to do with the delay in the child being born.

63. *Sworn Friendships.*—These are known by various names, which are usually connected with the object employed in sealing the friendship. One of the most common names is *Māhāprāsād*,

(the great feast or food). It is supposed to be formed by the convenanting parties partaking together of some of the food cooked and sold at Jugganāth, and brought home by returning pilgrims. As a matter of fact *Māhāprāsād* now means anyone who has sworn to be a life-long friend. These friendships are also formed with the use of Ganges water brought home by pilgrims. In this case the friendship is known as *Gangājal.*

Then, again, any flower may be employed, and the friendship would be termed merely *phul* (flower). This is usually the case amongst women. Each party places a flower in the ear of the other and the friendship is formed. If some particular flower is used that flower gives the name to the friendship. In all these bonds of friendship, it is incumbent on the promising parties to refrain from taking the name of his friend, and they call each other *Māhāprāsād*, *Gangājal*, *Dounā* (*Artemisia vulgaris* or Indian wormwood) or merely *Phul.* It is astonishing how very binding these friendships are considered. After an acquaintance with the people of 14 years I can recall only one instance in which such a friendship was broken. Like David and Jonathan, the parties stand by each other, they are bound together for better or for worse, etc., etc. In has been hinted to me that these friendships sometimes result in a community of possessions extending even to a community of wives. In this connection it is interesting to note what is done when one of the friends happens by forgetfulness or necessity to take the friend's name. He will go to his friend and say, "*Tor douki mor douki, gendā gajlā phul.*" These words may have two meanings and have been interpreted both ways to me. They may mean, "Your wife and my wife are a garland of marigold flowers;" or they may mean, "Your wife is my wife, a garland of marigold flowers." By repeating this couplet to his friend it is supposed the offending one makes propitiation for his offence.

64. *Concerning Witches, Fairies, etc.*—(1) There is a belief that witches sometimes have an insatiable desire for human blood, and they can suck blood from the navel of a child without anyone knowing it. As a result the child becomes emaciated and dies. There was once a Telin witch who was possessed by this desire for blood, and not being able to suck the blood from the navel of any other child she was compelled to draw blood from her own infant. If an adult also should suddenly become emaciated and loose flesh, it is said that a witch has sent down a long tongue or tube from the roof of his house when he was asleep and has drawn blood from his navel. In order to regain strength it is necessary to eat a small kind of fish found in the rivers. Also to eat a kind of rice. (2) If a child is believed to be possessed by a witch or an elf, it is customary for the parants to take a bangle and a tassel worn at the end of a plait of hair by women and to tie these articles to a twig of the *Baer* tree (*Jujuba vulgaris*). The *Baer* tree is supposed to be the special residence of witches, or elfs or other invisible beings. (3) According to Bates' *Hindi Dictionary*, the word *Pret*

has several meanings, "a spirit of the dead, a goblin spirit, evil sprite, fiend, etc." Here I find it is commonly used to mean an elf or fairy, not necessarily a being with evil influences. *Pretins* are said to assume the form of women and frequent the bazars. By their superhuman powers they can take away articles from the stalls of tradesmen without being detected. A woman with a crooked nose is suspected of being a *Pretin.* The story is told of a *Raut* (milk-man) who was returning from a bazar when he saw a *Pretin*, most beautiful to look upon, fomenting her child under a *Baer* tree. He persuaded her to go to his house, but he hid her *sāri* in a hollow bamboo. The *Pretin* lived happily with the *Raut* and they had three sons. At the marriage of the eldest son the neighbours asked the mother to dance and amuse them. She refused to do this unless she was given her own *sāri*, which the *Raut* had hidden. Persuaded by his guests the man at last produced the hidden *sāri* from the hollow bamboo. Scarcely had the woman put it on when she became invisible and disappeared, never to return. It is said that the descendants of the three sons of this *Pretin* are still in this district, but no one has ventured to inform me just where they may be found. Students of folklore will recognize in this story the widespread belief that the influence of fairies, giants, etc., lies in some special object, *e.g.*, Samson's strength being in his hair. (4) It is believed that some have the power of placing a *Pretin* in a flute or fiddle, and in this case the instrument will make music of its own accord without any human assistance.

65. *Deserting Houses.*—I have been told that amongst the jungle people of this district if a death should take place, the entire settlement, never very large, moves away to another site, doubtless because of the belief that the deceased will frequent his former abode. Amongst the people of this Tehsil, who live in larger and more settled villages and hamlets, there is an inclination to desert the house in which a death has occurred, and to build another house on another site. Higher up in the grades of civilzation we find a desire to withdraw from the room in which one has died, if not from the belief that it is haunted, then on account of the unpleasant associations. Amongst the people of whom I write, if a house is to be deserted it will be *leepoed*, a lamp lighted, and the residents will withdraw.

66. *Punishment of Witches.*—If I was to tell of all the witch stories which are told amongst the people, these notes would have to swell out to undue proportions. Perhaps I should mention that Chhattisgarh has long had a reputation for witchcraft and similar cults. Sleeman, writing as far back as 1835 in his *Rambles and Recollections*, mentions these parts as having an unfavourable reputation. It is currently reported that in the old days when a witch was found she would be tied to the horns or the legs of a buffalo, and the buffalo was then infuriated till the victim was killed.

67. *A Case of "Possession."*—It was on the night of the 9th of August, 1901, that I had the following experience with a man said

to be possessed by the Devil. At eleven o'clock I was called to the Leper Asylum, of which I am Superintendant, to see a leper named Visahu, who was laid hold of by *Shaitan.* It was a dark, drizzling night and I went to the Asylum lantern in hand. Approaching the gate of the Asylum I heard many loud voices for the lepers were greatly excited, and I could also hear the grinding of teeth from the unfortunate man. This was heard at a distance of fully one hundred yards. On approaching the crowd I found the leper Visahu, a man of medium physique, lying on the ground on his chest struggling violently, while two men were seated on him trying to keep him down. They told me he was making efforts to run away from them, and as the river was not far off they feared he would drown himself. I immediately ordered the men to loosen their hold of him, and I talked with him calmly and firmly and tried to pacify him. Meanwhile I noted the wild meaningless look in his eyes, as though he was terribly frightened. He was trembling, shaking from head to foot, his teeth were grinding, and I was convinced it was not a case of shamming. I concluded he was in a fit of some kind. Ordering the ammonia bottle from the hospital, I led Visahu to his own room, and had his bed put in readiness. As we were about to enter his room, the man broke away from me and rushing through the lepers who had gathered around, he went straight for the gate. I went after him as fast as possible, and the crowd followed me. Visahu ran straight into the grveyard, close by; seeing this the crowd hung back and only two attendants followed me as I ran after the man over the *Chamar* graves. With shod feet and with a lantern we had difficulty in following the man because of the cactus thorns and the ditches full of water. He, however, did not seem to heed these, and ran along bare-footed over the graves and the thorns to the other end of the graveyard where he plunged into a ditch full of water. When we overtook him, he sat quaking and grinding his teeth staring around wildly. I again laid hold of his arm and led him back to the Asylum and seated him in the Chapel. Here I kept him under my gaze, talked with him and poured water between his set teeth. For sometime he gazed at me stolidly, with a vacant look and without blinking; there was no intelligence in his face. In the meantime the ammonia was brought from the hospital. He did not seem affected by it. After about ten minutes in the Chapel, his face changed, he looked around to the others and said, "Why have you brought me here?" He seemed like one waking from sleep. He felt the mud and water on his body and asked why we had thrown water on him. I asked him where he had been; he said, "Nowhere!" He had no recollection of having acted strangely. He then became conscious of the bruise on his knee and the thorns which had become imbedded in his feet. On questioning him I learned that he had been on leave from the Asylum and had returned that morning walking some eight miles. After a night meal, he sat in the corner of his room playing on a long bamboo flute which has a deep monotonous tone. He wife was also in the room. After playing for some time he arose and went to the door to go out. Outside the door he said he saw a figure and exclaimed, "What is this?" Immediately he fell forward, and that is all he could remember. I am positive that this was not a case of shamming. I am also positive that he did not recall what took place, that he had no recollection of what took place from the time I saw him on the ground to the time he "came to himself" in the Chapel I am also certain that he was not under the influence of an intoxicant. This case puzzled me for a long while. I could not bring myself to believe it was a case of demon possession, though everything seemed to support that theory. Since this experience, I have looked into the subject of hypnotism, and I am now of opinion that this so-called "case of possesion" was actually a case of auto-hypnotism. The man playing his flute in a monotonous tone for a long time (probably gazing at the light) brought himself into the hypnotic state when he was susceptible to any outside suggestion. Seeing a shadow, may he not have taken this to be a spirit about to possess him? Then the cries of his neighbours "*Shaitan lagu hai*" would still further deepen the impression, or, technically, the "suggestion," until he actually became to himself a man possessed. I have seen persons coming out of the hypnotic state, and the way in which consciousness returned to them reminded me of the way in which the leper came to himself and was first conscious of his bruises. I mention this case with the only explanation which suggests itself to me. Perhaps I should say again that there was no history of the use of intoxicants, and the man who is still in the Asylum (May, 1905) is not addicted to the use of intoxicants. Need I add that all the lepers and all the neighbours were fully convinced that it was *Shaitān* who possessed the man, and the *Shaitān* was supposed to be the spirit of a leper who had died fifteen days before and was buried in the graveyard into which Visahu took us on that memorable night in August.

68. *Pacifying the God.*—I once saw a man leading a black goat. On questioning him I was told that he had a buffalo worth forty rupees which was ill. He was taking the goat to tie near the buffalo. He would feed the goat in the name of the *deo* which possessed the buffalo, and when the buffalo recovered, at the next principal festival, the goat would be slaughtered in the name of the god. Some days later I heard that the buffalo had died, and the man was wishing to sell the goat. Another sacrific, however, proved more fortunate. I had a syce, a Ghassia by caste, who had an only son, who was drowned in the river. As the syce and his wife were getting on in years, they wished to have another son. I recall the time when my syce asked leave that he might sacrifice a pig at some shrine in order to have a son. A year or eighteen months later I was told that Raru, the syce, had a son. This boy is now living, is about ten years of age, and comes to me every Christmas for *Baksheesh*. His father is too old for service. Nothing could convince the father that the son was not given in

answer to his sacrifice. To his parents he is in very truth a Samuel —" asked of God."

69. *Terrors of the Night.*—In common with all primitive peoples, the villagers of this Tehsil are greatly scared by the dark night. It is not the dread which civilized persons have of stepping on a snake or a scorpion, but the darkness to them is frequented by evil spirit and malign influences. Specially after someone has died is this fear apparent. It is completely removed during the moonlight nights and most apparent during the dark wet nights in the rains. On a dark night it is considered unwise to name a person recently deceased; a snake also should not be mentioned. By naming the snake or the deceased they will come near. "Speak of an angel," as the saying goes.

70. *Settling Quarrels.*—The Rauts or herdsmen have a festival in September or October, which I am sure will repay investigation by an expert. I wish to mention one item in this connection. For about a month the Rauts go around dressed up with strings of shells (*kowries*) with leather or metallic shields and *lathies* or wooden swords in the hand. At this time they have what is called *mātār jāgnā*. *Jāgnā* means to awake, but what *Mātār* means I cannot say. The Rauts get together on the site where they usually tie the cattle during the heat of the day, and at this place they have a great feast and a merry time. They are all dressed up as described above, and I am told they eat with their shoes on and their *lathies* in their hands. After this feast they go forth to settle any quarrel which may have arisen with neighbouring Rauts during the past year. The quarrel is settled by the use of *lathies* and not by words, one party throws out the challenge by shouting out words of abuse, the others reply and they engage in a hand-to-hand fight till the people in one party are defeated and take to their heels. The people tell me that these fights still take place, but I have had no positive evidence of this being the case.

71. *Scorpion Stings, Immunity from.*—I know for a fact that there are persons on the Tahsil, who are immune to the sting of the scorpion. A man of my acquaintance will deliberately take up a scorpion holding it by the tail. This is not merely done by courage due to dexterity, for I once saw the scorpion strike him and the only discomfort he experienced was a pain as though the part had been burnt or rubbed with chillies. There is a belief that dark skinned persons are more susceptible to the poison, for they suffer more intensely. It has also been stated that if a woman is stung by a scorpion during pregnancy, her offspring will be immune to the scorpion poison. There are certain persons who have a reputation for removing the pain consequent on the sting of a scorpion, and they go through various mesmeric passes over the part stung; and if the distressed portion be the arm, they profess to gradually bring down the pain to the fingers from which extremity the pain is eliminated.

72. *Concerning a Mushroom.*—There is a dark-coloured rather high-growing mushroom found in the open fields, which is known as *Suri gae ki dhetti*, *i.e.*, the teats of the Suri (wild) cow.

I am told that this mushroom grows over the spot where a cow has given birth to its young. It is an invariable practice for the herdsmen or the ploughmen when they find this mushroom to stick it in the cord round the waist or to put it behind the ear. It seems to serve no practical purpose, and yet people carry it around like a charm. This mushroom is tough and leathery and appears to be quite durable.

73. *The Festival of Stilts.*—During the latter half of the Hindu month of Srāvan is held, what I have termed, the festival of stilts because of the practice amongst the boys and sometimes the young men of making stilts and playing with them for 15 days. Just as soon as the light half of Srāvan comes around, these stilts will be seen. The stilts are made by tieing small pieces of bamboo about a foot in length to a long bamboo six feet long, and the foot is placed not across the step of the stilt, as is usually done by English schoolboys, but the foot is placed lengthways on the step of the stilt, so that the long bamboo is held by the toes of the foot. The stilts are not nailed in any part but are tied with twine; and when the twine is wet it makes a creaking noise rubbing against the bamboo, and this noise made at every step of course adds immensely to the enjoyment of the youngsters. When the fifteen days are over, at the *Porā* festival, the children make some specially dainty cakes, and taking their stilts they all go down in a body to the river or tank. Here the stilts are all stacked together like rifles in a guard-room. Before this stack of stilts the children offer *hom* (incense), sometimes merely burning dried cow-dung Then they untie the foot-pieces from the stilts, and one foot-piece is thrown into the river and the other is either buried in the sand by striking it upright or it is carried to the home and struck in the ground in front of the doorway.

The long pieces of bamboo are also taken home and put in the roof to be kept till the next season. After this festival of stilts, the *Kumhārs* make earthen bullocks, paint them in gay colours and take them round for sale. They also make earthen grinding mills and small vessels to amuse the girls. This time of the year appears to be specially the time of amusement for the little ones.

74. *The Fisherman's Net.*—During the *Dasherah* festival a fisherman goes around with his net and he throws this on to the child of any prominent person. This appears to be a sign of good-luck or prosperity, for the parents of the child reward the fisherman with grain or money. A fisherman once tried to throw his net on my little girl; she was greatly alarmed and would not allow it to be done. The man thought it would be unfortunate to be thus hindered; so he placed his net over me. It is a question whether he was more concerned for his own interests or mine.

75. *Snake-Lore and Snake-Charmers.*—The snake-charmers of the district are called *Gouriyās.* They appear to be few in number and I do not find them named in the Census Report. They reside in a few villages of this Tahsil, engage in agriculture during the rains, and in the dry months they wander away to great distances

with their curious pets, which they exhibit and thus make a precarious living. I have called them snake-charmers, but they do not charm with music. I have yet to see the *Gouriyā* who uses the gourd flute so often seen in other parts of India. They wear the peculiarly twisted narrow turban which is characteristic of the Indian snake-charmer. They have attached to their turbans a few claws of bears or tigers and the talons of hawks or large birds of some kind. The snakes usually carried around are the *Python molurus* and two varieties of the cobrā; one with the spectacles and the other without them. The cobrā with the mark on the head is called the *Domi;* without this mark it is called the *Gouhā*, they are believed to be quite distinct snakes. I learned, in conversation with the men, that they make an agreement with the snake when it is first captured as to how long it will be kept in captivity. Some vow to keep it for six months, others for a year-and-a-half. When the time is up, the snake is given its freedom and another is captured. It would be considered a very great misfortune if a snake should die in captivity. On questioning a man as to how the cobrā came to have the mark on its head, I was told that when *Bhagwān*, the deity, went into Pātāl, (the nether region) he placed his foot on the *Nāg*, and it is the footprint of *Bhagwān* that is seen on the snake to-day. "It shall bruise thy head, etc." *Gen.* iii. 15. The *Python molurus* is considered the most *dharmi* (righteous) of all snakes. The reason is that it will never go out of its way to seek for its prey; it lies quietly till the victim happens to come into its immediate vicinity, and then it will lay hold of it. The *Ptyas mucosus* is locally known as the *Āshariyā*, from the month Āshār, corresponding with June-July. It is so called from the popular belief that it is poisonous only in Ashār. The following interesting story is told concerning this snake. I have heard this tale with many variations and it appears to be widely known: At one time the *Āshariyā* was the only poisonous snake[1] in existence. It found a *raut* (a herdsman) lying on the side of a field where he had fallen asleep while tending his cattle. Near the head of the herdsman lay his bamboo flute, which he often played to while away the time while watching his cattle. Now the *Āshariyā* had often heard the sound of the flute, and was annoyed at hearing the music. Finding the *raut* asleep, he determined to silence him forever. He approached the head of the sleeping man and struck him in the forehead saying, "Now you are silenced, and I will never again be troubled with your music." When the *Āshariyā* had gone away, to his great astonishment he again heard the sound of the herdsman's flute just as before. The flute lay at the head of the dead body in such a position that the wind blowing through it caused it to make music just as when played on by the owner. The *Āshariyā* was much enraged at the thought of his poison not having silenced the *rāut*. He determined to distribute his poison to others, and to increase the possibility of the man being killed by his poison. He therefore gave an invitation to all manner of reptiles to come to a feast which he had prepared. All the reptiles came in great numbers to this feast.

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[1] [*Cf.* the Karin and Patani Malay stories of the python (Mason's *Burma* and Annandale, *Fascic. Malay Anthrop.* I).—Ed.]

While distributing food to the guests the *Āshariyā* mixed with the food a good portion of his own deadly poison, which up to that time he alone had possessed. The cobrā and the scorpions and all other stinging insects received as much poison as was contained in the food of which they partook. Hence the various degrees in the poison of snakes. The *Āshariyā* in consequence had only a little poison left, and so it is poisonous only in the month of *Āshar*. It is said that traders in cattle and those who have to do with the breaking in of cattle keep a piece of the tail of the *Āshariyā* by them. If the tail of this snake is pushed up the nostril of a refractory animal (a bullock or a buffalo) the animal will immediately become manageable and submissive. There is still another snake which holds an important place in the folklore of the district. This is locally known as the "*Muṛari sāp*." I cannot supply the scientific name, but it belongs to the family of earth-snakes, which burrow underground and come to the surface only occasionally. It is not much more than eight inches in length, thick and of much the same dimension from end to end. On account of the similar appearance of head and tail, it is sometimes said to have two heads. For six months it goes one way, and for six months the other. On being touched this snake has a way of curling around in a circular from. This may account for the name (*muṛnā* means to twist), and it certainly accounts for the popular belief that it is the greatest enemy of the larger snakes, for it will twist itself around them till they are strangled. But the most common belief with regard to the *Muṛaṛi* is that it will attach itself to a woman's breast and draw away her milk while she sleeps. The snake, it is said, will place its tail in the child's mouth and thus soothe the child while drawing away the milk for its own nourishment. Women hold this snake in special abhorrence.

While speaking with a man concerning the *Muṛari*, he told me that only recently he had killed this snake in the house of a neighbour, and he had found a quantity of milk in its maw. On my expressing my doubt he went on to explain that his neighbour's wife had a child which had lost flesh for some time past. The reason given was that the snake was taking the woman's milk while the child was starving. Now that the snake had been destroyed, the child was gaining flesh and improving in health. If a *Muṛaṛi* is found in the fields, it is taken up on a stick and thrown towards the sun. This is called *suraj dekhānā* (shown the sun). It is thrown high up in the air and is killed as a result of the fall. The snake charmers also informed me that at the *Hariyāli* festival, it is their practice to go out in the fields and burn *hom* (sacrifice) at the roots of the trees or herbs which are employed as antidotes to snake poison. It is at this festival also that they lay in a stock of antidotal herbs for use during the coming year.

76. *A Love Portion called Hāthājori.*—The Gond women who go around the Tehsil in the winter months tattooing and selling herbs and roots with medicinal properties, also have with them a herb known as *hāthājori*, which may be roughly translated *hands*

joined. I have seen this herb or root, and it certainly resembles two hands clasped together. This is said to be a *mohini* and is given by a suitor to a woman whose affections he may wish to win. Dr. Watt's in his *Economic Products of India* mentions a vegetable growth of this name and he calls it "Eagle's claw." (See his Dictionary M. 208.) He makes no reference to its being a love-portion, and may be he describes an entirely different herb to that which is sold by the Gond women. I have mentioned the *hāthājori* here because of its connection with the following passage in *The Sacred Tree* (a work by Mrs. J. H. Philpot), page 106. "In the valley of Lanzo in Piedmont, lovers in doubt whether to marry consult the oracle in the form of a herb called *concordia*, the root of which is shaped like two hands each with its five fingers." Jewellers sometimes advertize in their catalogues ladies' brooches, which represent two hands clasped together. Is this merely a convenient emblem of friendship, or is it a survival from herbs which looked like clasped hands which were used as love-portions? Since scarf pins with the horse shoe are a survival of the primitive belief that iron wards off evil spirits, why may not this clasped-hand brooch also claim as ancient an ancestry?

77. *A Marriage Practice.*—Going through a village, I noticed a strange figure made of straw attached to a long bamboo hanging over a house. On inquiring I was told that a marriage had recently taken place in the house, and the figure which drew my attention was that of a deer. I then learned that it is customary after a marriage for the bride and bridegroom and friends to resort to the river or tank and wash off the *huldi* with which the persons of the bride and bridegroom have been covered; and while this is being done there is much fun and joking and teasing. One of the plays at this time is to make a deer of straw and place a bow and arrow made of bamboo in the hands of the bridegroom and not let him go from the river till he has taken good aim and pierced the deer with his arrow. After striking the deer he gives chase to the bride who with her friends runs away to the house, and is there overtaken by the bridegroom and his friends. The deer is hoisted on a high bamboo and hangs over the house for some time.

78. *A Primitive form of Lamp Light.*—The *Croton tiglium* is most commonly found throughout this Tehsil. It is used as a border plant for gardens and groves. The seeds of this shrub form a drastic purgative, and are used for this purpose by the people. But there is still another use made of the seeds. They are strung together by children in long rows, and the lowest seed is set on fire and the seeds burn in succession one after the other very slowly, at the same time giving out quite a deal of light. This play amongst the children may possibly be the remains of a general practice of lighting the houses with the seeds of the croton strung together.

79. *Massage and Branding of Infants.*—It is considered a necessity for the mother to massage her infant daily. The mother sits on the floor with her two legs stretched out together straight in front. The child is placed on its back in her lap, the head resting between the knees and the feet towards the mother. By the side

of the mother is the *Gorsi* or roughly-made earthen pot in which are kept the slowly-burning cowdung cakes. The infant's abdomen is first oiled and then the mother places one hand over the fire and the other over the child's stomach, and thus with rapid movements of the hands massages the child with each hand alternately. Meantime she is singing some soothing lullaby. This fomentation is intended to remove flatulence. But sometimes a much severer process is adopted. The child is said to be attacked with a complaint which is called *Dhābhā*. I am unable to say whether this is merely a severe attack of flatulence or constipation or a specific disease. The stomach of the infant, it is said, becomes swollen and hard. If it be a mild attack of *Dhābhā*, the abdomen is branded with the point of an iron sickle. The sickle is placed in the fire till it is red hot and the point is then applied to the stomach in eight or ten different places. Once when passing through a village at night I heard excrutiating cries from a child; on inquiry I was casually informed that a child was suffering from *Dhābhā* and the parents were having it branded. If the disease assumes a severe form, what is called big *Dhābhā*, then several double-pice are placed in the fire, they are then taken up with pinchers and applied to the surface of the abdomen leaving a burn the size of the face of a pice. I believe fully 99 per cent. of the natives of this Tehsil carry on their person the marks of this infantile branding. Some of them carry the marks for forty and fifty years. May we not ask if this practice of branding infants has not some connection with the widespread belief that changlings and witches are afraid of fire and also of iron. This belief may have originated the practice, which has continued because of the beneficial results due to counter irritation. Adults are also branded on the arms and legs in severe cases of rheumatism or in cases of sprains.

80. *Stone Heaps.*—In certain parts of the Tehsil will be found a great pile of stones. A single heap of stones is called a *Kurihā*, from *Kurhonā* to heap. The people can tell nothing as to the origin of the practice, but they say it is considered fortunate to throw a stone on to the heap in passing and thus add to the accumulation of stones. In 2 *Sam.* xviii 17, with regard to the burial of Absolam, we read that he was thrown into a pit and they "raised over him a very great heap of stones" (Revised Version). In Adam Clark's commentary on the above passage I find the following remarks: "This was the method of burying heroes and even traitors .....The ancient cairns or heaps of stones in different parts of the world are of this kind." In Col. Meadows Taylor's novel *Tara, a Maharatta Tale*, I find the following passage descriptive of the country near Bijapore. "The heap of stones had been formed gradually by travellers who, coming from all sides, took up one from the path, and threw it with a prayer to the local divinity upon the pile. This had been done no doubt for centuries."

81. *Ideas regarding Transmigration.*—Some years ago I was quite intimate with a *Satmāni Chamār*. He was fully eighty years of age. This man had many strange ideas, which, unfortunately, at that time I did not appreciate. With my present acquaintance

with folklore, I would have regarded him a valuable "find." For many years now at the *Divali* festival, a lamp has been burnt at his grave for three nights in succession. This old man claimed to be able to tell just what form any man or animal has assumed in the last life, or incarnation. He said that he had some cattle, who were persons who had died owing him money; and they had returned in this form to pay their debts. He himself claimed to have been a Rajput in the last life, and for some offence he was born a Chamar. He expected on his return to the earth to be born a Brahman. I once took him to see my horse which was tied in the stable. On our entering the stable the horse started. I said to Goburdhan, "Now, can you tell me what this horse was in the last life." He was equal to the occasion, for he replied immediately, "He was a deer and was shot." "How do you know?" I asked. "Did you not notice how he started when we entered," he replied, "he is timid like a deer, and look at this," pointing to a birth-mark on the side of the animal, "this is where a bullet has entered. He was a deer and was shot." It is a common idea amongst the people of this district that marks on the body are transmitted. If a child should be born and should die almost immediately, the expression used is "*bahurgayā*, "It has returned." The idea is that the life came into this world and went back from whence it came.

82. *Observation during a Small-pox Epidemic.*—Early in 1904 there was a small-pox epidemic in the town of Mungeli; and I had ample opportunity of making many interesting observations. The conclusion I came to was, that during the epidemic the people feel that there is some strong personality in their midst, and all their efforts are with the purpose of pleasing this great power or influence or person. As is usually the case, they believe what would please themselves will please this great being or power. The *mātā* or *devi* is supposed to be visiting the family in which there is a case of small-pox. It is not considered a misfortune but rather an honour. The yard of the house in which the patient lies is surrounded by a hedge of thorns or dried twigs. The purpose is to keep away persons whose presence will annoy the goddess and to hinder persons with shod feet approaching the house. Someone is always in attendance on the patient. Every word he may utter is considered the word of the goddess. If the patient requests water, the attendants will say, "The goddess is thirsty," and will bring the coldest, purest water obtainable. In the delirium all the wild sayings of the patient are considered the utterances of the great person in their midst. The behests of this person must be complied with, however difficult and repulsive. If the patient says he wants food from the house of a scavenger, it must be done rather than incur the wrath of the goddess. Once a man walked eight miles to ask for food from my table. The reason was that his daughter had small-pox, and when asked what she wanted, she was understood to say she wanted food from the sahib's house, and the father begged me to give him some. On several occasions the people have come asking for the fruit of the *papiyā* from my

garden, as the *mātā* had asked for this fruit. If the goddess should demand a hen, the hen will be purchased and tied near the bed of the patient. It is said that a hen with reversed feathers is the one most appreciated. During a small-pox epidemic I have known poultry with reversed feathers to sell at an exorbitant price. Sometimes a goat is tied in the house of the patient and daintily fed in the name of the goddess, with a promise that it will be slaughtered in the event of the patient's recovery. Every evening in each house in which there is a small-pox patient, music is heard and songs are sung in praise of the goddess. Musical instruments are also employed, more especially the drum. The friends of the patient will sit up all night. If the patient is in distress, nothing is done to alleviate the suffering; but the friends perplex themselves in trying to find out what they have done to annoy the goddess or what they have omitted to do which will please her. One evening I questioned a young man passing my gate as to where he was going. He replied he was going to join his friends who were to watch by the house of a caste-fellow who had small-pox. On inquiring why he was going to watch, he replied, "In case a dog or a cat should come near the house at night and annoy the goddess." I asked how long the friend had had the sickness. He replied, "Six years." On seeing my perplexity he explained that they say *year for day* in speaking of this illness. I then asked how much longer he expected the friend would be sick. He replied, "Eight or ten years." When the epidemic was abating in the town of Mungeli, the following story was told around and about the town and was believed to be true by all who heard and all who told it. A certain Bania, whose name was given, went from Mungeli to the neighbouring town of Nawagarh; on his return after dark he came upon seven women seated by fires on the roadside. He addressed them as "friends" and asked them for fire to light his *birhi* (pipe). They paid no attention to him, and he noticed their fires had no smoke and that they burned steadily. He then went his way on horseback. His syce or groom came behind him and met these same women. They said to the syce, "Your master addressed us as friends and we have destroyed two of his children. Tell him we have done our work in Mungeli and are now going to Nawagarh." This story was believed to account for the sudden cessation of the disease in Mungeli and its sudden appearance in Nawagarh just at that time. I have been told that when the disease first appears on a person, he is seated on a bed and his feet are bathed with great ceremony. The water in which his feet are washed must be taken from a running stream; and the water must be taken up in a vessel drawn against the current and not in the direction in which the water is flowing. When the sickness has left the patient his entire body is bathed with great ceremony either on a Monday or a Thursday. Several months after the patient has recovered, the people have the ceremony of "*Vidā karo*," that is, "sending away" the goddess, as some visitor, is sent off, with ceremony. Special food is prepared, and the family party all wear new clothes, and with music and procession they all proceed to the river, where food and small articles are thrown into the stream. Those who vowed the gift of hens or goats, go to the temple or shrine of the goddess, and there they will either set free those creatures or will slaughter them and leave the remains to be removed by the sweepers or other low-caste people. It so happened that the *holi* festival came on when the epidemic was in full force. I had expected this festival to be observed with much zest as the harvest had been plentiful. In such years all festivals are observed with much ado. To my surprise the *holi* festival that year received but little attention, and singing and obscene language were guardedly employed. The reason, I learned, was the presence of the *mātā* in their midst. It was considered offensive to the goddess to sing the *holi* songs. Special songs are sung at night to please the goddess, and it will be interesting some time to have these songs recorded and translated and published in this Journal.

83. *Concerning Stone Inplements.*[1]—While conducting a class of young men, I happened to have on my table a copy of the Journal of the Asiatic Society of Bengal. I showed the class illustrations of the stone implements in the Journal. One of the men remarked, "When I was a boy my father had a stone like that one," pointing out one in the illustrations. The young man said his father called it a "*sarag patar*"—heaven or sky stone. I immediately saw the importance of this name and was positive the young man referred to a stone implement. In widely separated countries the belief prevails that the stone implements are thunderbolts, and here was the name "heaven stone" used by the people in Mungeli. Next morning I made further inquiries, and my syce offered to get me a "*sarag patar*" which was owned by one of his uncles. The uncle turned up in due time bringing with him a bored stone, and I saw immediately that it was undoubtedly a stone implement of former days. The only use for which this stone was now employed was as a remedy for *galwa*, swollen glands, round the neck. The man who owned the stone, said it had come down from father to to son in his family, for generations. Together with this stone the man brought me a piece of stag's horn, which he said had always been with the stone. I now very much regret that I took no interest in the stag's horn and purchased only the bored stone. It did not occur to me that there was any possible connection between the stone and the stag's horn. Some months later I was reading Sir Daniel Wilson's book on *Left-handedness.* On page 49, he shows that in all probability the makers of flint arrows, etc., employed bones or horns, for these were the only implements at their service. The fact that a stone and a stag's horn were handed down for generations together would indicate some close connection between the two; and it seems probable that the stag's horn was the implement with which the stone was the bored. After two years of search I have succeeded in getting together only a dozen stones. Some of these have been badly rubbed when they were used medicinally. But we are able to judge of their original shape and form. One or two of the stones are beautifully smooth inside where bored, "as smooth as glass," as a friend remarked.

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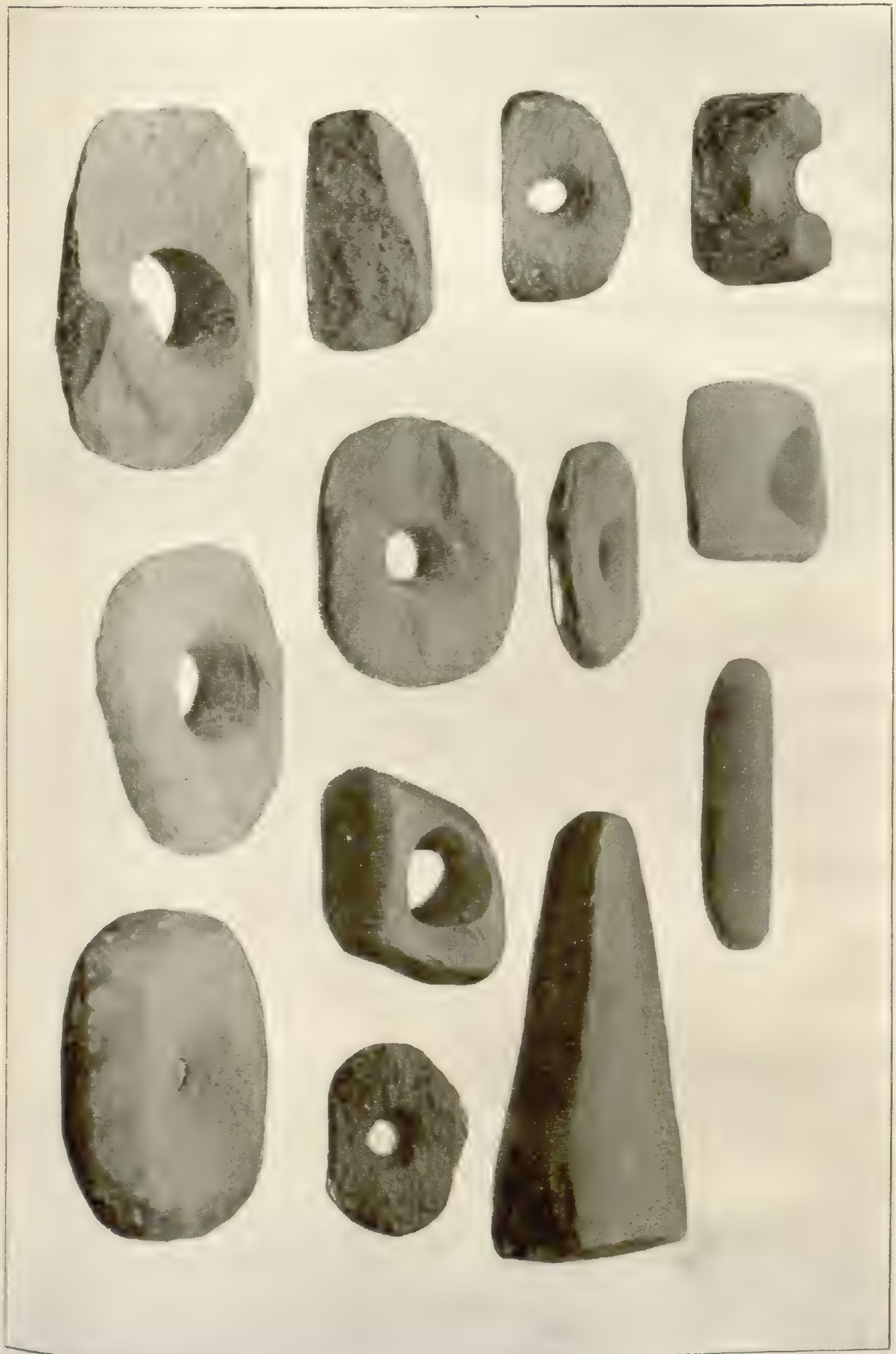
[1] See Plate VI.



One stone has undoubtedly been arrested in the process of manufacture. The outward form is complete and it has not been rubbed in any way for medicinal purposes. The hole in the centre, however, is only half bored. This hole was evidently made by striking in some sharp-pointed implement. It certainly does not show signs of the rotatory action of a horn or bone implement. One or two of the stones in my collection were said to have been found in fields near the site of an old village. Others have been heirlooms in families for many generations. One man told me he owned a "heaven stone," but his house was washed away in a flood and the stone disappeared. The people are very reluctant to make known the fact that they own the stones; and they seem very reluctant to part with them.

25. *A short history of the House of Phagdu, which ruled over Tibet on the decline of Sakya till 1432 A.D.—By Rai* Sarat Chandra Das, *Bahadur,* C.I.E.

When in former times the Sakya hierarchs enjoyed the proud privilege of being the spiritual instructors of the Tartar Emperors of China, the envoy Situ Akyid took a census of the households of the agricultural Tibetans and also of the *Hor* Tibetans (so called from their leading a nomadic life like the Mongols). Within the *Thikor* or governorship of Phagmodu in Central Tibet, there were included two thousand four hundred and thirty-eight families, out of which six hundred belonged to Lhasa City, and five hundred to Taglûng. When *Hor* Jam, one of the Tartar Commissioners of China, visited the Chyaῆgkhā (the northern province, including Nom-tsho or lake Tengrī Nor), he included the numerous tribes of herdsmen that dwelt there in the political province of Phagmodu. The Emperor of China, in consultation with the spiritual authorities of Sakya, placed this large division under an able *T'hipon* or provincial governor. Formerly, when both Dikhûng Di-gün̂ and Dansa-thil hierarch amalgamated their temporal and monastic possessions, Gompa Shagrin, the abbot of Dikhûng, with the general consent of the clergy and laity of Tibet got one of his relations, named Gomtson, appointed as *T'hipon* who, under the patronage of the Chiefs of Kang-yeng and lower Mongolia built the government house (*T'hikhang*) of Tshong-du-tāgkhar. Thereafter, Khanpo Ringyal, the Toḷpon of the famous hierarch Chyan-n̂a Rinpoche, became the chief of Lhobrag Shong-de. About this time a native of Kham, named Dorjepal, by his ability, energy and accomplishments, attracted the notice of Chyan-n̂â-Rinpoche. This young man, introducing himself to that Grand Lama as one sprung from the noble family of Dag Lah-zig, and as very anxious to be his disciple, so insinuated himself into his confidence, that the Grand Lama, struck with his general efficiency in all matters of importance, sent him to China to represent the interests of his grand hierarchy. There he took the opportunity of securing for himself and his heirs the governorship of Central Tibet, together with a state seal and decorations. Returning to Tibet in the year *Tree-tiger* (1192 A.D.), he built the *T'hikhang* (government houses) of Yarlûng, called Namgyal-ling and N̂edong-tse. During his rule, which extended over thirteen years, he enjoyed the goodwill both of those who were above and under him. He was renowned for his liberality. His governorship extended over twelve important places, besides N̂edong-tse, which was the chief seat of his government. These were Halayang, Namo, Chag-tse-tugu, Thangpo-chin-ling-me, Choi Slukha, Monkhar, Tashi-dong, Gyathang, Tshong-dui-tag-kha, Zangri-Phodang-gang, Khortog-cha, and Kardo. After his death, his younger brother named Shon-nu Gyal-tshan, discharged the duties of *T'hipon* for three or four years. He was succeeded by one of his relations, named Chyang-shon (born of the family of Kya-ya-dag-chu), during whose administration the Sakya and Dikhung hierarchies fought with each other. Chyang-shon had the good wishes of the Sakyapa authorities, but owing to some cause having incurred the displeasure of Ponchen (chief Governor) Anglen of Sakya, he was ordered to be burnt alive, but on explaining matters he was exonerated and his life spared. After his death the grandson of Shon-nu Gyal-tshan, named Shon-nu Yontan, became *T'hipon.*

At this time Thumer Bukhoi, a Mongol prince of the Imperial family, with his wife, came on a pilgrimage to Tibet. The *T'hipon* having failed to show his efficiency in military as well as in civil matters, and being reported to have oppressed his subjects, the younger brother of Chyan-ña Rin-pochhe, nicknamed Gya*v*o, or the bearded, recommended his dismissal to the Mongol chief. During this time the State affairs of *T'hikhor* were conducted by a council formed of the following: The governor of Sakya Monastery, named Rin-chen Tashi, Tson-dui Pal, a relation of Chyan-ña-Rin-poche, the second cousin of Shon-nu Yontan, Tagpa-P*ho*zer, the son of Gogochu, named Dorje of Yarlung, Jo*v*o Tagpa Rin, and others. In the meantime, with the sanction of the Emperor of China, Taisri Tagpa-*hod*pa became governor. By bringing Gya*v*o, the brother of Chyan-ña-Rin-poche, over to his side, he also assumed the spiritual power. He gave the ex-governor, Shon-nu Yontan, the villages of Tenpora and Chomonkhar for his personal maintenance. On the death of Gya*v*o, the elder brother of Chyan-ña-Rin-pochhe, named Gyal Shonpal, proceeded to Peking, and with the sanction of Lhaje Phagmodu, (Phag-du heirarch) assumed the office of *t'hipon.* Shortly after, he was deposed by the Sakyapa authorities, who placed his younger brother in charge of the government. From him the office descended to Gyal-tshan Kyab, the son of Shon-nu Gyaltshan.

When Disri Kuntob-pa proceeded to China, Gyal-tshan Kyab was discharged from the governorship. Ritsi Wang Gyalpo then became *t'hipon,* and received the title of Tai Situ. He was succeeded by Sonam Gyal-tshan, the grandson of Gyal-tshan Kyab, who performed the duties of *T'hipon.* He was very popular with his subjects. He was so very resolute that no one could oppose his views or outdo him in anything. He brought all Tibet under his sway. Situ Chyan-tshan, from his early age, became skilful in war, literature, and religion. At the age of fifty-five in the year *Water-monkey,* in the 15th of the second month, he undertook the task of rescuing the Sakya regent, Ponchen Gyal-tshang, who had been kept in durance by the abbot Lhakhong Labrangpa of the great temple of Sakya; and for this purpose he placed himself at the head of the troops of Ǖ and Tsang and waged war with Sakya. On the 5th of the fifth month of the same year, with the assistance of the minor chiefs, he besieged Sakya and delivered the chief from the hands of his enemies. Before dispersing his army he compelled the heirarch to appoint him as chief *t'hipon* of Tibet, and was supported by his nephew, Situ Lodoi Gyal-tsan, in his works. He was presented with a hexagonal seal, and the people of Tsang distinguished him by raising white silken banners in his honour. He encouraged both literature and religion.

Chyaṅ-chub Gyal-tshan (the younger brother of Rinchen Tagyal) was born in the year *Tree-tiger* 1302, A.D. In the fourteenth year for his age (*Hare-year*) he took his admission into the monastery of Sakya, where he stayed with the heirarch Dag-nid-chenpo. He was entrusted with the office of keeping the Government seal. Once the Grand Lama asked if he (Chyaṅ-chub) would go up for the church, so as to be called a Rinpoche, or for the State to be called *t'hipon* or governor. On his wishing to be a Rinpoche, the Grand Lama said, "No, you are destined for the State. In order to qualify yourself for a governorship you should study the work called 'Yul-Jyal' and some works on political ethics." Thereafter, taking leave of the Grand Lama, he became a pupil of Lama Nam-mé-chenpo and learnt the two parts of logic. In the autumn of *Tiger-year* Chyaṅ-Chub and his elder brother Lopon Tagzang were respectively invested with the temporal and spiritual offices. At the investiture, people were entertained with tea boiled in the same cauldron. Lopon Tagzang expounded the sacred laws and delivered sermons, while Chyaṅ-Chub assumed the dignity of *T'hipon* or governor.

When Chyaṅ-Chub became known all over the country, with the help of all other minor *T'hipon*, he besieged Sakya. He occupied Chya-zang-gang, which was then called Cha-zang-kang, and from some good action done in it, it became known by the name of Chyazang Jong (or the place of good action). During his reign the house of Lha-zig became very powerful. Having achieved many exploits in temporal matters, he (Chyan Chhub) resolved upon doing pious actions. He built the monastery of Tse-thang (Chethang) and established a college there. He made Nedong-tse the chief seat of government. Inviting the Grand Lama Sonam Gyal-tshan, he consecrated the religious establishment founded by him and appointed his cousin, Shakya Gyal-tshan, as the head of the church and president of the ceremonies to regulate the order of precedence. Thus the government of Phagmodu, for its efficiency both in temporal and spiritual matters, became very famous, and excelled those preceding it. At the age of 63, in the year *Fire-dragon*, he retired from this existence at the palace of Nedong (Gahdan-tse). His cousin, Cakya Gyal-tshan, succeeded him in the throne of Nedong-tse, and assumed both the spiritual and temporal affairs of the State. By his able administration of the church and the secular laws, he increased the prosperity and peace of Û and Tsang. On account of his being ever thoughtful for the happiness of his subjects, he was praised by all men and called Jan Yang Çakya. The Tartar Emperor, Thugan Themur, conferred on him the title of Changa-kûng. After his death, his younger brother Shakya Rinchen, became chief the *t'hipon* and filled the throne of Nedong-tse. He was very fond of inspecting the works of local officers and inquiring after the condition of his subjects. Once while on tour in Û and Tsang, he stopped at the village of Gya-mo-Shong. Here the house that he and his party occupied, accidently caught fire, which quickly spreading so surrounded him that he and his servants very narrowly escaped from being burnt. On his return he founded the monastery of Khartag Gonsar, and stayed there to avert the calamities that, according to his fortune-tellers, hung over him. He always roved from one place to another. Chyang-tag Chyan presided at the head of the State Church for a few years.

After Çakya Rinchen's death his younger brother, Tagrin, filled the throne of Nedong-tse. For some time the state affairs were in the hands of Gyal-tshan-Zang and his cousin. The control of the government remained with Chyan-ña till Gyal-tshan Zang, also called Tagrin, came in a state hide-boat from Gongkar to relieve him of the charge. He was succeeded by Tagpa Gyal-tshaṇ, a boy of eleven, the son of Çakya Rinchen, in the year *Tree-bird.*

From his boyhood Tagpa Gyal-tshen took to athletic and intellectual exercises. When he advanced in age he began to show his ability and fortitude. Within a few years of his attainment of youth, he established his authority over all the governors of Û and Tsang. The Emperor Tā-Ming bestowed on him the decorations of *Konting Gushri* and *Tshan-ha Wang*, and presented him with a gold seal. He also from time to time received other titles of honour, besides kind instructions from the Emperor himself. Power, fortune, and wisdom were ever attached to him. His reign extended from the 11th to the 59th year of his age. The State under his rule progressed very much in wealth and prosperity. Of all the rulers of the Phagdu dynasty, his reign was the longest. He died at Nedong-tse in the 59th year of his age in the year *Water-mouse.*

From the foundation of Nedong-tse and Namgyal Jong of Yarlung by *T'hipon* Dorjepal in the year *Tree-tiger* to the present year *Tree-tiger* (1432 A.D.) 240 years have elapsed. Nedong-tse was therefore founded in the year 1192 A.D.

Another account of Chyañ-Chub Gyal-tsan and his successors.

In the year 1302 A.D. Chyañ-Chûb Gyal-tshan, of the well known family of Lhazig, was born in the town of Phag-du in Central Tibet After subjugating all the thirteen (*Thikor*) provinces of Tibet proper and also Kham, he had established his sway over Tibet. At the age of eighteen he was appointed to the com mand of 10,000 soldiers under orders from the Emperor of China. This sudden elevation excited the jealousy and enmity of the chiefs of Di-guñ, Tshal, Ya*h*zañ and Sakya authorities, who spared no pains in devising means to ruin him. At last, they drove him to war. In the first battle he met with some reverses, but was victorious in the second. The war lasted for many years, when ultimately victory attended the arms of the chief of Phagdu, who captured almost all the hostile chiefs and threw them into prison. After this discomfiture, the chiefs, nobles and Lamas of Û and Tsang jointly petitioned the Emperor to degrade the upstart. But the irrepressible Chief proceeded to Peking; there, presenting the skin of a white lion, besides other rich and rare presents to Emperor Thugwan Thumer, he represented the circumstances connected with the case. Pleased with his sincere statements, the Emperor decided in his favour and appointed him hereditary noble of Tibet, assigning the whole of Û to him with the exception of the province of Tsang which continued to remain under the heirarchy of Sakya.

After his return to Tibet from Peking, Chyañ-Chûb organized a regular form of government for Central Tibet. He reformed legislation, and revised the ancient laws and regulations. He built the castle of Nedoñg-tse and a large fortress with three gates to the ramparts. Inside it he founded a monastery. He endeavoured to observe the *Dasa Çila* (ten moral virtues). By his exemplary morals and pity, and above all by his beneficial rule, he won the sincere esteem of his subjects. He founded the town of Tse-thang with a monastery in it. He built thirteen forts such as Gongkar, Tagkar, &c. Later on, he induced the Tartar Emperor to confer on him the high distinction of Tāi-Situ together with authority over the whole of Tibet. By his able rule he increased the happiness and prosperity of his people.

The fourth in succession from him was Sakya Rinchen,[1] who became a favourite of the Emperor, by whom he was entrusted with the collection of revenue from one of the great provinces of China, and also with the charge of guarding the Imperial palace. Sakya Rinchen, intead of showing his gratefulness, took part in a conspiracy matured by the Chinese prime Minister named Kyen-Hûn, to usurp the throne. He sent many wagons, loaded with armed soldiers, concealed under heaps of silk clothes under cover of darkness inside the imperial city. The Emperor, fortunately, having got scent of the matter secretly fled towards Mongolia. Sakya Rinchen proclaimed the minister's son, Li-Wang, as Emperor of China. Thus through the help of a Tibetan chief the Tā-Ming dynasty was established. Yûng Ming presented Tag-pa Gyal-tshan, son of Sakya Rinchen, with a gold seal and the additional possession of ulterior Tibet. He was made the undisputed sovereign of all Tibet, which extended from Nagahrikor-sum to Sze-chuan. Tag-pa Gyal-tshan was succeeded by his son Wang-Jûng-né, whose appointment was confirmed by the Emperor Kyen Tai Li-Wang. He built the fortresses of Hug-Yûg-ling and Karjong. His grandson, Rin Dorje, obtained the title of Wang (king) from China. Ñag Wang Tashi was a very impartial and just ruler. He shewed great veneration for the Dalai Lama So-nam Gyatsho, whom he greatly patronized. The celebrated Dharma Raja named Padma Karpo of Bhutan was also a friend of his. He several times fought with his rebel minister Rinchenpûñpa and was every time successful. He was decorated with the title of *Kwa-tin Kau Sri* by the Emperor.

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[1] Son of Rinchen Kyab.

During the reign of the Phagdu dynasty all Tibet enjoyed peace and prosperity. People became rich in money and cattle. The country enjoyed immunity from famine and murrain, and was not harassed by foreign invasion. Although, some petty fights and quarrels with some of the disaffected and rapacious ministers now and then disturbed the peace of the country, yet on the whole, the dynasty was beneficial to Tibet.

26. *Additions to the Collection of Oriental Snakes in the Indian Museum, Part 3.* (With 3 figures).—*By* N. ANNANDALE, B.A., D.Sc., *Deputy Superintendent of the Indian Museum.*

The present communication deals with a miscellaneous assemblage of specimens, and completes for the present my notes on recent additions to the collection, all the Oriental species having now being worked out and arranged[1]. Four new species and a new genus are described below, two of the former coming from the Malay Archipelago, one from N. E. India, and one from Gilgit. Considering the number of individuals examined, this does not represent a large percentage of novelties; and although new forms will certainly continue to be discovered from time to time in the remoter districts of the Indian Empire, it is clear that we now have a good general knowledge of the systematic ophiology of the country. The addition of a second species of *Helicops* to the fauna of Asia is interesting, while one of the new Malaysian forms is a good example of superficial resemblance, if not of "Mimicry." A new *Typhlops* and a new *Ablabes* have no particular importance, but must be recorded in order to complete the list.

In regard to doubtful specimens, I have made it a practice to dissect out the jaws on one side. This seems to me to be the only way in which it is possible to ensure a satisfactory view of the dentition. The operation can be performed without materially damaging the specimen externally, and if the bones are preserved in a small tube stoppered with cotton wool in the bottle in which the specimen is kept, they are available for future study.

TYPHLOPIDÆ.

TYPHLOPS MULLERI.*

A specimen from the Malay Archipelago is mottled on the dorsal surface of the posterior part of the body with dull yellow, the remainder of the back and sides being brown instead of black; but the latter peculiarity may be due to imperfect preservation.

TYPHLOPS KAPALADUA,* sp. nov.

Diagnosis.—Habit stout; length about 27 times diameter of body; tail much broader than long, ending in a spine; snout obtuse, the sides rounded, moderately projecting. Rostral between $\frac{1}{3}$ and $\frac{1}{2}$ as broad as head, reaching the level of the eyes behind, separating the nasals completely. Nostril lateral, almost visible from above, with a single large subcircular pit embracing the nasal cleft beneath it; nasal completely divided, the cleft starting from the second labial, not reaching the upper surface of the head. Supraoculars large, frontal and parietal feebly developed. A præocular; no subocular; the former larger than the ocular, in contact with the second and third labials; eye barely distinguishable. Twenty-six scales round body. *Coloration* – Upper surface olive-brown, each scale paler at the edge; upper head scales broadly edged with yellow, a yellow ⊓ on the snout and a wedge-shaped mark of the same colour behind each eye; lower half of the rostral and labials and the whole of the lower surface, yellow.

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[1] Since this sentence was written I have obtained some further additions to the collection in the desert tract of S.E. India. They will be described in a later communication to the Society. September 16, 1905.

Total Length.—280 mm.

A single specimen from the Malay Archipelago, probably from Java.

Typhlops acutus.

This species appears to be commoner than any other in Calcutta. It is sometimes found in native houses. I have lately had an opportunity of observing living specimens. When placed in a vessel with earth at the bottom they burrowed very rapidly, provided that the earth was not too hard, forcing their way down by muscular action of the anterior part of the body and making a passage no broader than their own diameter. I failed to see them feed, but have reason to think that they eat the earthworms with which they were supplied, at night. When taken in the hand they coiled round one of the fingers and pressed the tip or side of their hooked and pointed snout against the skin. They could do no injury in this way to the human skin, but seemed rather to be attempting to get a grip. Probably this peculiar modification may be useful in restraining captured worms and it is worthy of note that the caudal spine present in a larger number of the Typhlopidæ is absent both in this form and in several exotic species in which a beak is developed.

GLAUCONIIDÆ.

Glauconia blanfordii.

G. blanfordii, *Alcock and Finn, J.A.S.B.*, 1896, (2), p. 561.

In addition to the specimens recorded by Messrs. Alcock and Finn, we have received during the last few years others from Quetta (*Major G. C. Nurse*); Khotri, Sind (*Bombay Nat. Hist. Soc.*), and Bushire, Persia (*Karachi Mus.*). The relative diameter of the body varies considerably, but the number of the scales round it appears to be constant. Well preserved specimens have the upper scales feebly edged with pale-brown.

COLUBRIDÆ.

Calamaria leucocephala.*

Two specimens from the Malay Archipelago, one from Java.

DRYOCALAMUS TRISTRIGATUS.*

A small specimen of this rare snake from the Malay Archipelago.

TROPIDONOTUS KHASIENSIS.*

A specimen, probably from Burma, obtained by one of the Museum collectors.

MACROPISTHODON HIMALAYANUS.

Tropidonotus himalayanus, *Boulenger, Faun. Ind., Rept.*, p. 347.

Dissection of the jaws of a specimen lately received from Sureil, Darjeeling, (*Major A. Alcock*) shows that this species belongs to the genus *Macropisthodon.* Fourteen small teeth are followed in the maxillary, after an interspace, by two large, backward-directed fangs. In *T. subminiatus*, the condition is somewhat similar, but the interspace is not so clearly marked. Evidently the separation between the two genera is not a natural one, but the great number of forms included in *Tropidonotus*, in which I would propose to leave *subminiatus*, makes it convenient.

COLUBER RADIATUS.

A specimen from Cuttack, Orissa, (*R. T. Crighton*). I am not aware that the species has hitherto been recorded from this part of India. The late Prof. J. Wood-Mason corresponded with the donor about the specimen, which has been in the Museum for many years; but it appears to have been mislaid at the time when Mr. W. L. Sclater was compiling his *List of Snakes*.

ABLABES BALIODIRUS.*

Specimens from Java and the Malay Archipelago.

ABLABES GILGITICUS,* sp. nov.

Diagnosis.—Habit slender; head small; tail short, ending in a well developed spine.[1] Rostral deeper than broad, visible from above; nasal divided; eye half as long as snout; præfrontal undivided, its length much greater than that of the sutures between the internasals; frontal as long as its distance from the snout, much shorter than the parietals; one præ–and one postocular; loreal large, much longer than deep; temporals 1+2; 7 upper labials, third and fourth entering eye; 4 lower labials in contact with the anterior chin shield, which is larger than the posterior. Scales smooth, in 15 rows; ventrals 158; anal entire; caudals 34. *Coloration*—Back and sides dark brown, each scale edged, spotted or blotched with pale yellow; ventral surface paler brown; a broad yellow collar; nape, labials, chin and throat, yellow.

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[1] A similar spine occurs in other members of the genus, notably *A. rappii* but is not so large in any Indian form as in the new species.

Dimensions—

Total Length	125 mm.
Length of Tail	18 „

A single specimen from Gilgit, collected and presented by Capt. McMahon.

This species may be distinguished from any other Indian *Ablabes* by its extremely short tail. It has much the facies of a *Calamaria*.

HELICOPS INDICUS,* sp. nov.

Head flat, rather viperine; snout obtuse; canthus rostralis well marked. Eye not more than half the length of the frontal; pupil very small. Rostral much broader than deep, well visible from above, separated from the internasal, which is undivided; frontal more than twice as long as broad, obtusely truncated in front, sharply pointed behind, slightly longer than its distance from snout and than the parietals; loreal deeper than long; one præocular, two postoculars; temporals 1 + 2; 7 upper labials, the fourth entering eye; three lower labials in contact with the anterior chin shield, which is shorter than the posterior. Scales smooth, in 21 rows; ventrals 161; anal entire; sub-caudals 72. *Coloration*—dark brown above; on each side of the dorsal surface a pale line originates at the posterior border of the parietal and runs along the body and tail. Ventral surface dull yellow reticulated more or less distinctly with dark brown; a dark spot in the centre of each ventral shield. Labials dull yellow marbled with dark brown.

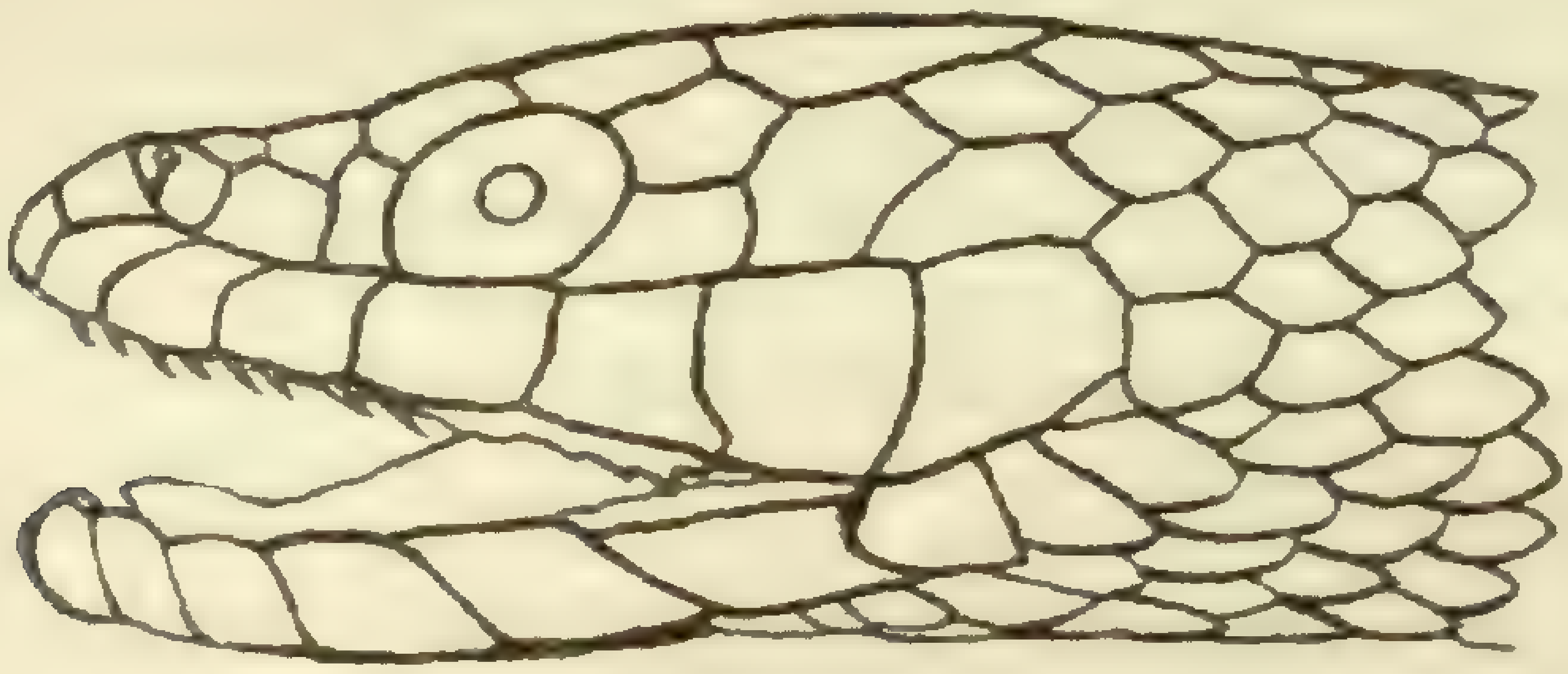

Fig. 1.

Helicops indicus.

Dimensions—

Total Length	200 mm.
Length of Tail	40 „

Localities—

Monghyr, Bengal, and Rampore Tea Estate, N. Cachar. Two specimens, both purchased.

H. indicus may be distinguished from *H. schistosus*, the only other Asiatic species, by its viper-like head, small eye and smooth scales. As possibly the type specimens are immature, the coloration may be more uniform in the adult than that described.

The following is a " Key " for the two Indian species :—

1. Diameter of the eye more than half the length of the frontal. Scales keeled, in 19 rows ... ... *schistosus.*
2. Diameter of the eye not more than half the length of the frontal.
Scales smooth, in 21 rows ; nasals in contact behind the rostral ... ... *indicus.*

The distribution of the genus *Helicops* is very interesting Species occur in Tropical Africa ; in S. and E. India, Burma, Ceylon, Malaya and Yunnan ; in Florida, Central America, the West Indies, and S. America east of the Andes. The similarity between this distribution and that of the Cæcilian genus *Herpele*,[1] which has recently been elucidated by Alcock, is striking. I may point out that one of the types of *Helicops indicus* is from the same locality and collection as that in which the type of *Herpele fulleri* was found. This fact, seemingly trivial in itself, illustrates the improbability of convergence or parallel development being the explanation of all such difficulties in the study of the distribution of animals ; for both *Helicops* and *Herpele* are well defined and apparently natural genera, having no peculiarity in common with one another superficially or anatomically.

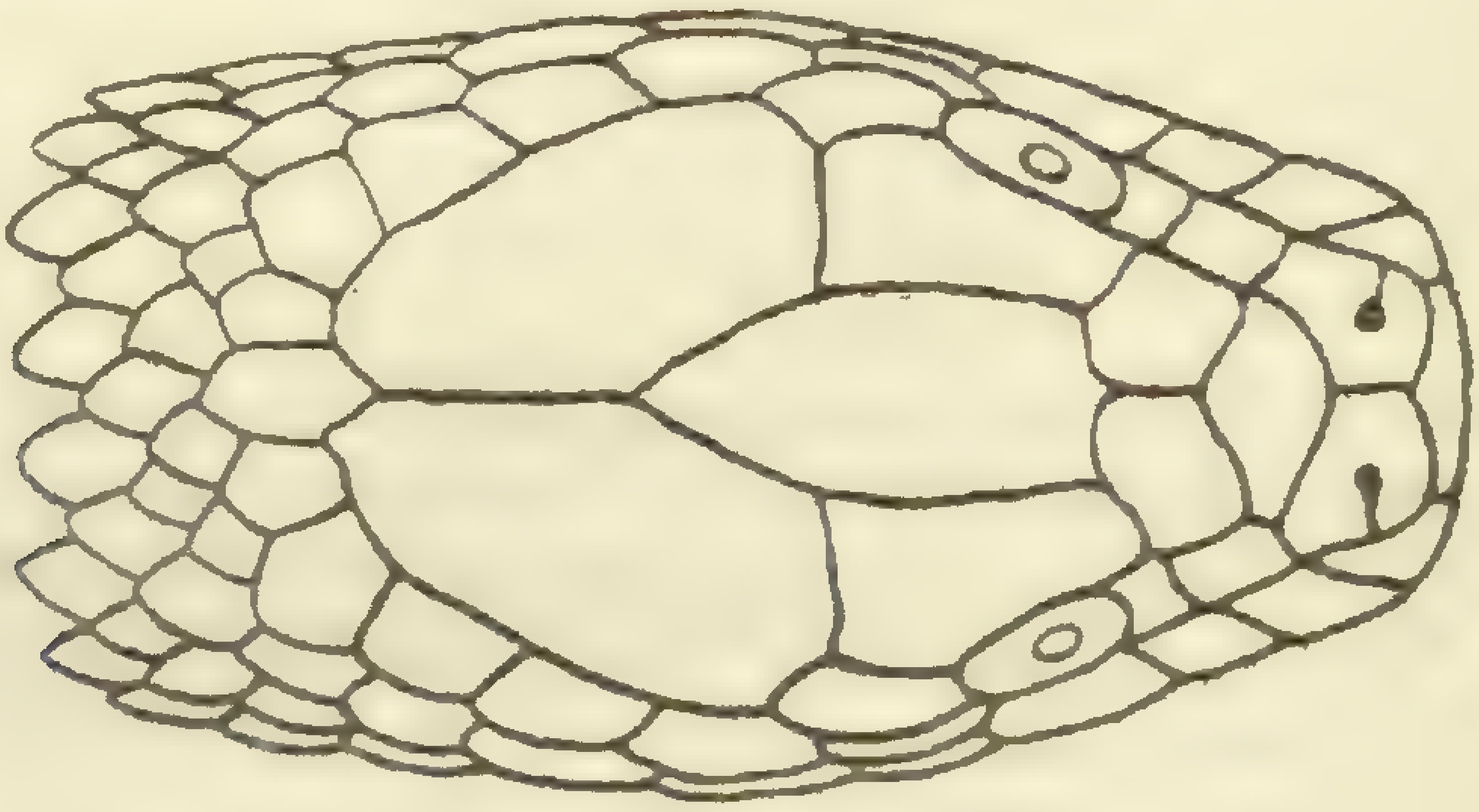

Fig. 2.

Helicops indicus.

DIPSADOIDES, gen. nov.

Family Colubridæ ; *sub-family* Dipsadomorphinæ.

Head distinct from body ; eye large, with circular pupil ; body strongly compressed, with dorsal row of scales enlarged throughout, scales in rows of uneven numbers (19 in type), with apical pits; caudals divided. Palate toothed; solid maxillary teeth few (6 in type), subequal, followed, after a short interspace, by a pair of moderately sized, almost vertical grooved fangs; mandibular teeth subequal.

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[1] *Ann. Mag. N. H.* (xix), 1904, p. 267.

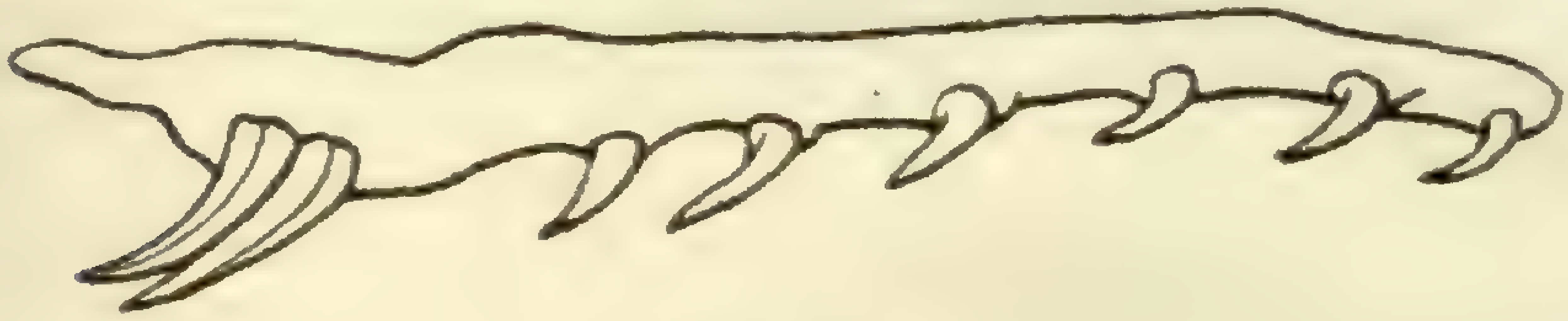

Fig. 3.

Right maxillary of *Dipsadoides decipiens.*

DIPSADOIDES DECIPIENS,* sp. nov.

Head small, flattened, very distinct from neck; snout short, obtusely rounded; eye prominent, nearly as long as snout; nostril large, directed backwards, in undivided nostril. Tail slender, tapering. Rostral broader than deep, just visible from above. Internasals larger than præfrontals; frontal longer than broad, as long as its distance from snout, slightly shorter than parietals; a large præocular and a small postocular; supraocular very large; loreal deeper than long; temporals 2 + 2; eight upper labials, the third, fourth and fifth entering the eye; two large subequal chin shields, the anterior in contact with four labials, both in contact with their neighbours. Body scales narrow, leaf-shaped, slightly oblique on neck, strongly imbricate; in 19 rows; the dorsal row enlarged throughout, broader than long. Ventrals rounded at the edge, keeled at either side, 258 in number; anal entire; caudals 152. *Coloration*—dorsal surface and sides pale brown profusely spotted and marbled with dark brown and, less profusely, with dull yellow; a large number of irregular dark bars on the dorsal surface. Ventral surface dull yellow marbled posteriorly with dark brown; chin and throat spotted with dark brown.

Dimensions—

Total Length	...	...	900 mm.
Length of Tail	...	...	265 „

Habitat. Malay Archipelago. A single specimen.

This remarkable snake was confused at first sight with some specimens of *Dipsadomorphus cynodon* in the same collection to which it bore a close external resemblance. It is one of the many interesting species received from the Royal Natural History Society of Batavia.

BUNGARUS SINDANUS*, Blgr.

B. sindanus, *Boulenger, Journ. Bombay N. H. Soc.* XI, 1897-1898, p. 73, pl.

A specimen $64\frac{1}{2}$ inches long has lately been sent to the Museum from the Zoological Garden, Alipore. The Superintendent of the Gardens tells me that it was captured at Midnapore, Lower Bengal, by a reliable collector and arrived at the Gardens early in 1896. It must, therefore, have lived in captivity for nine years. The Giant Krait, as this species may be called, has hitherto been recorded only from Sind, but probably occurs, somewhat sparingly, all over northern India.

27. *Note on the Kantābudiyās of Cuttack.*—*By* Jamini Mohan Das. *Communicated by the Anthropological Secretary.*

The Kantābudiyā caste numbers less than one thousand persons, and is confined to the Cuttack District. The family titles are Khuntiyā, Parirā, Nāyak, Lenkā, Sāhu, Baru, Behārā, Rāut, and Mahānti. Most of these are also titles of the Khandaits and Chāsās, and the Kantābudiyās may have been degraded from one of these castes because they took to the occupation of dealing in tobacco. The members of the caste claim that it is an offshoot of the Khandait caste. They use the same *Santak* or signature mark as the Khandaits—the *Katāri* or dagger. Like the Khandaits, they assume the sacred thread at marriage, but unlike them, they only wear it for eight days and not permanently. They account for their name by a legend that they are the descendants of a foundling who was abandoned near a thorny bush (*Kantābudā*) but tradition does not give any further particulars as to his origin or history. The caste is divided into two totemistic *gotras*, Kacchap and Nāgasa, the members of which revere the tortoise and the cobra respectively. These groups are neither endogamous nor exogamous. There are no endogamous groups within the caste. The exogamous limit is formed by the family title. A Khuntiyā for instance may marry a Parirā but not another Khuntiyā. Similarly, a person may not marry into a family which bears the same title as his maternal grandfather.

Widow re-marriage is allowed. Divorce is permitted on the ground of unchastity. There is nothing to prevent the re-marriage of a woman who has been divorced, if any one will take her. Polygamy is not practised unless the first wife is barren or suffers from an incurable disease.

The Kantābudiyās belong to the Vaisnava sect. Adhikāri Brāhmans act as their priests, and Brāhman and Karan Vaisnavas as their *gurus*. In all essential respects they follow the marriage customs of the Khandaits and Chāsās.

Persons who die before marriage are buried. Others are buried or burned according to convenience. Mourning continues for ten days and the *Sraddha* is performed on the eleventh day.

The traditional occupation of the caste is dealing in tobacco and turmeric, but about half of the members now combine agriculture with it. There is no organised caste council; meetings of the caste are presided over by the most learned or intelligent member present.

In the matter of food and drink, the Kantābudiyās follow the customs of the Khandaits and Chāsās, who will not, however, take any food from them. The higher castes will not take their water, but they are served by the barber and washerman. The *Gauras*, however, will neither carry their *palkis* nor eat in their houses, and this alone is sufficient to show that they rank lower than the Khandaits and Chāsās. As a consequence of this custom, the Kantābudiyā bridegrooms walk on foot in their marriage processions.

28. *Dignāga and his Pramāṇa-samuccaya.*—*By* Satis Chandra Vidyābhūṣaṇa, M.A.

Distinction between ancient Nyāya and modern Nyāya.

Hindu philosophy is divided into six principal systems of which the Nyāya is one. This Nyāya again is divided into two schools called respectively the ancient Nyāya and modern Nyāya. The distinction between the two schools is this: the ancient Nyāya treats of atoms, properties of atoms, souls, the transmigration of the soul, mind, God, etc., as well as of processes of perception, inferences, and the like, while the modern Nyāya deals only with the methods of perception, inference, etc. The object of the ancient Nyāya is to explain the means of salvation, while that of the modern Nyāya is to give an exposition of the fundamental principles of reasoning. This shows that the ancient Nyāya is a mixture of physics, metaphysics, theology, logic, etc., while the modern Nyāya is exactly identical with what we understand by the term logic.

Buddhistic origin of the modern Nyāya.

As this modern Nyāya is the most favourite and honoured subject of study in the Sanskrit *tols* (academies) of Bengal, it is worth while to trace its origin. There can be no doubt as to the modern Nyāya having been developed from the ancient Nyāya, but nothing can be definitely stated as to how and when it was so developed. The first extant work on ancient Nyāya is undoubtedly Gotama's Nyāya Sūtra dated about 500 B.C., but we do not know definitely what was the first work on modern Nyāya.

It was for a long time the universal belief of the Paṇḍits of our country that the Pramāṇa-cintāmaṇi, compiled by Gaṅgeśa Upādhyāya of Mithilā in the 14th century A.D., was the oldest work on modern Nyāya. But this belief of the Paṇḍits was shaken nearly sixteen years ago by Professor Peterson, who published under the auspices of the Asiatic Society of Bengal a Buddhist Sanskrit work on modern Nyāya, called Nyāyabindu, by Dharmakīrti. This work, which was dated the 7th century A.D., at once showed that Gaṅgeśa Upādhyāya's Pramāṇa-cintāmaṇi could not have been the first work on modern Nyāya. Recently another revolution has been caused in our theories by the literary collection of the late Tibet Mission. The Mission has brought from Gyantse the Tibetan version of another Buddhist Sanskrit work on modern Nyāya, called Pramāṇa-samuccaya, compiled by the Buddhist logician Dignāga who flourished long before Dharmakīrti. The Sanskrit original of this work is not available in India or Nepal and has perhaps been lost. But the Tibetan version and numerous authoritative commentaries on the same show in unmistakable terms that this work is the earliest at present known work on modern Nyāya.

In Tibetan there are numerous treatises on logic by various Indian Buddhist authors. These treatises are contained in the Tangyur, section Mdo, volumes 95-116. There the first work on logic is Pramāṇasamuccaya by Dignāga. The next work is Pramāṇa-vārtika-kārikā (or a commentary in verse on the above). Then follows Pramāṇa-vārtikālaṅkāra, and so on. Jinendrabodhi's excellent commentary on the Pramāṇa-samuccaya, called Viśālāmalavatī-nāma-Pramāṇa-samuccaya-ṭikā,[1] is also to be found there. Nyāyabindu, Pramāṇa-viniścaya and other excellent Buddhist works on logic are also preserved there. The Tangyur, containing all these works, has been brought from Gyantse by the Tibet Mission, and is now deposited in the British Museum, London. Nearly eighty years ago another set of the Tangyur was brought from Tibet by the late Mr. B. H. Hodgson. That set is now contained in the library of the India Office, London. These excellent and old works on logic lead us to conclude that the credit of having founded the modern Nyāya must be attributed to the Buddhists, among whom there were numerous logicians such as Dignāga, Dharmakīrti, Dharmottara, Vinītadeva, S'āntabhadra, Akalaṅkadeva, Jinendrabodhi, Kamalaśīla and others. These Buddhist writers had flourished long before the Brāhmaṇic logician Gaṅgeśa Upādhyāya compiled his Pramāṇa-cintāmaṇi.

The circumstance which led the Buddhists to forsake the ancient Nyāya and to lay the foundation of a new system called modern Nyāya was due to the peculiarity of the religion which they professed. Having considered the sixteen categories treated in the ancient Nyāya to be redundant and some of them as mainly based on the orthodox principles of the Hindus, the Buddhists took up only one category, *viz.*, *Pramāṇa* (evidence of knowledge), and treated it in such a way that the doctrine of evidence might be equally applied to the religious systems of the Hindus and Buddhists. The attempt on the part of the Buddhists to divest the principles of logic from those of theology, metaphysics, etc., was the cause of the foundation of the modern Nyāya, otherwise called Tarka-śāstra or Logic proper.

Life of Dignāga.

As Pramāṇa-samuccaya (Tibetan: ཚད་མ་ཀུན་བཏུས་) is the earliest-known work on the Buddhist Nyāya, a short account[2] of its author may be of some interest to the reader. Dignāga (Tib. Phyogs-glaṅ ཕྱོགས་གླང་) the celebrated author of this work, was born in a Brāhman family in the south near the country of Kāñci bordering on the city of Siṃhavakta, and acquired vast knowledge in all Tīrtha systems. By Nāgadatta the Paṇḍit of the Vātsīputrīya school he was admitted to the religious system of that school and attained erudition in the Tripiṭaka of the S'rāvaka. Afterwards he became a disciple of Ācāryya Vasubandhu, with whom he studied all the Piṭakas of the Mahāyāna and Hīnayāna. When he had specially obtained incantation formula from a mantra-knowing Ācāryya and practised sorcery, he saw the face of Mañjuśrī and learned the *dharma* (Law) from him. He resided in a solitary and woody country in the land of Orissa in a cavern of a mountain called Bhoraśīla, and gave himself entirely up to contemplation.

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[1] This work (together with the Tibetan version of the Nyāya-bindu-ṭīkā, Candra-vyākarṇa and Tārā stotra) has been kindly lent to me for six months by the Government of India.

[2] *Vide* དཔག་བསམ་ལྗོན བཟང་ Pag-sam-jon-zang (pages 100-101), edited by Rai Sarat Chandra Das, Bahadur, C.I.E., and Lama Tārānātha's *Buddhism*. Schiefner, pp. 130–135.

A few years later he was invited at Nālanda, where he defeated the Brāhman Sudurjaya and other Tīrtha dialecticians and led them into the doctrine of Buddha He expounded many Sūtras to the religious body, spread the Abhidharma, and composed several logical and dialectical S'āstras. He is said to have composed one hundred śāstras in all. Returning to Orissa he busied himself with contemplation. Seeing that the S'āstras on Dialectics, composed earlier by him, remained scattered about, he resolved to collect them. Accordingly, putting together fragments from particular works, he engaged himself in compiling the Pramāṇasamuccaya (Tib. Tshaḏ-maḫi-m̱do-kun-las̱-ḇtus̱-pa, or simply,Tshaḏ-ma-kun-ḇtus̱) in which at the opening lines he pays obeisance to Buddha :—

Complilation of Pramāṇa-samuccaya

ཚད་མར་གྱུར་པ་འགྲོ་ལ་ཕན་བཞེད་པ།
སྟོན་པ་བདེ་གཤེགས་སྐྱོབ་ལ་ཕྱག་འཚལ་ནས།

"Having bowed down before Him who is Logic incarnate, the benefactor of all creatures, the teacher, Sugata and the protector."...

While he was writing the opening lines the earth trembled and all the places were filled with light and a great tumult was audible. A Brāhman named Īśvara Kṛṣṇa,[1] surprised at this wonder, came to Ācāryya Dignāga, and, finding that he had gone out to collect alms, wiped out the words he had written. When in this manner he had wiped them out twice, Dignāga wrote them a third time and added—"Let no one wipe this out even in jest and sport, for none should wipe out what is of great importance ; if the sense is not right and one wishes to dispute on that account, let one appear before me in person." When, after he had gone to collect alms, the Brāhman came to wipe out the writings and saw what was added, he waited. When the Ācāryya had returned they began controversy, either staking his own doctrine. When he had vanquished the Tīrtha several times and challenged him to accept the Buddhist doctrine, the Tīrtha scattered ashes, pronounced incantation formula on them and burnt all the goods of the Ācāryya;

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[1] Kṛṣṇ-Īśvara, or simply Kṛṣṇa, seems to be the same as Īsvara Kṛṣṇa, the celebrated author of Sāṃkhya-Kārikā, which was translated into Chinese by Paramārtha, A.D. 557–56), noticed in Nanjio's Catalogue, No. 1300. The Tibetan name is ནག་པོ་ཐབ་ཕྱུག = Kṛṣṇa-'Īśvara.

and when the Ācāryya was kept back by the conflagration the Tīrtha went away. Thereupon Dignāga reflected that when he could not work the salvation of this single individual he would not be able to work that of others, and was on the point of giving up his purpose (of compiling Pramāṇa-samuccaya). Āryya Mañjuśrī appeared to him in person and said:—

བུ་མ་བྱེད་མ་བྱེད་སྐྱེ་བོ་དམན་དང་འཕྲད་ལས་བློ་གྲོས་ངན་སྐྱེ་སྟེ།
ཁྱོད་ཀྱི་བསྟན་ནས་འཆོས་འདི་ལ་མུ་སྟེགས་ཚོགས་ཀྱིས་གནོད་མི་ནུས་པར་ཤེས།

ཁྱོད་ཀྱིས་ས་མ་ཐོབ་ཀྱི་བར་དུ་དགེ་བའི་བཤེས་སུ་ང་འགྱུར་གྱི།
ཕྱི་མའི་དུས་སུ་བསྟན་བཅོས་ཀུན་གྱི་མིག་གཅིག་ཏུ་ནི་འདི་འགྱུར་རོ།།

"Son, don't do so, don't do so: owing to contact with a low person there has arisen a bad thought in thee: know that the Tīrtha crowd cannot harm this S'āstra of thine: since I shall remain thy spiritual adviser until thou attainest perfection, this S'āstra will henceforth become the sole eye of all the S'āstras."

The Ācāryya asked:—

བཟོད་ཀའི་སྡུག་བསྔལ་དུ་མ་དང་ལྡན་བརྟག་དཀའ་ལ།
སེམས་ཀྱང་དམ་པ་མིན་པའི་སྤྱོད་པ་ལ་དགའ་ཞིང་།
སྐྱེ་བོ་དམ་པ་འཕྲད་དཀའ་གལ་ཏེ་ཁྱོད་ཀྱི་ཞལ་མཐོང་ཡང་།
བདག་ལ་བྱིན་གྱིས་མ་བརླབས་དེ་ལ་ཅི་བགྱིད་མཆི།

"If I am to suffer many unbearable misfortunes and have to rejoice in the practice of an ignoble being, and if it is difficult to meet with a noble one, what profits it to me to see thy countenance if thou dost not bless me?"

Mañjuśrī replied, "Trouble thyself not, I will protect thee from all terrors," and disappeared. Thereupon Dignāga completed the S'āstra.

Supernatural powers of Dignāga.

Once he was slightly ill and obtained alms from the city; and having fallen asleep while staying in a forest he dreamed a dream. In that dream he saw the face of many Buddhas and attained many *samādhis*. He saw many gods pouring rain of flowers, and the flowers of the wood coming together before him and the elephants affording him cool shade. The king of the country, who had gone for a pleasure excursion with a troop, saw him and, full of admiration, he caused him to be awakened from sleep by the notes of music. Being asked whether he was Dignāga, he replied in the affirmative, and the king fell at his feet. Subsequently he travelled to the south, chiefly meeting his Tīrtha controversalists in discussions.

He restored, for the most part, the schools of religion founded by the former Ācāryyas. Again, at Orissa, he converted to Buddhism Bhadrapālita, the treasury minister of the king. This Brāhman founded sixteen vihāras and placed religious men in them. As a proof of the perfect purity of his character, the stem of a Myrobalan tree, called Muṣṭiharītakī, which cured all diseases and which was to be found in the garden of this Brāhman, having been entirely withered, revived in seven days after the Ācāryya had uttered an incantation for its restoration.

Since he had refuted chiefly the Tīrtha controversalists, he was called the "Fighting Bull" (Sanskrit: *Tarkapuṅgara*; Tibetan: རྩོད་པའི་ཁྱུ་མཆོག་) His pupils, combined together by religion, filled all countries, but he had not with him a single *Sāmaṇera* who could succeed him. Since he was a man of limited desires and contentment, he performed during his life-time the twelve tested virtues and died in a solitary wood of Orissa.

Jina identified with Dignāga.

In the works of the Chinese pilgrims the name Dignāga is not mentioned at all. But there occurs the name Jina, which I suppose to be identical with Dignāga. Dignāga in the Brāhmanic works, especially in those of Udyotakara and Vācaspati Miśra, is designated as a Bhadanta. Similarly Jina in Chinese books, specially in those of I-tsing, is mentioned as one of the ten Bhadantas (*vide* I-tsing's *Takakusu*, p. 181). As Dignāga in Sanskrit and Tibetan books is known as an eminent logician, so is Jina in Chinese books. Thus I-tsing observes (*Takakusu*, p. 184):—"When they have understood the arguments of Hetuvidyā (logic), they aspire to be like Jina (the great reformer of logic). I-tsing continues (*Takakusu*, p. 188):—"When a priest wishes to distinguish himself in the study of logic he should thoroughly understand Jina's eight S'āstras." These, according to I-tsing, are:—

1. The S'āstra on the Meditation of the Three Worlds (not found).
2. Sarva-lakṣaṇa-dhyāna-śāstra (kārikā)—(Nanjio's Catalogne, No. 1229).
3. The S'āstra on the Meditation on the Object. Probably Ālambana-pratyaya-dhyāna-śāstra (Nanjio's Catalogue, No. 1173).
4. The S'āstra on the Gate of the Cause (Hetu-dvāra)—(not found).
5. The S'astra on the Gate of the Resembling Cause (not found).
6. The Nyāya-dvāra (tāraka) S'āstra (by Nāgārjuna?)—(Nanjio's Catalogue, Nos. 1223, 1224).

7. Prajñapti-hetu-saṅgraha (?) S'āstra—(Nanjio's Catalogue, No. 1228).
8. The S'āstra on the grouped inferences (not found).

The seventh book, called Prajñapti-hetu-saṅgraha, compiled by Jina, seems to be identical with Pramāṇa-samuccaya which, besides ninety-nine other works, was compiled by Dignāga.

According to I-tsing (*Takakusu*, p. 182) Dharmakīrti made a further improvement in logic after Jina. From Indian sources too (such as from Nyāya-bindu) we know that Dharmakīrti was a distinguished successor of Dignāga and a commentator on his works (*vide* K. B. Pathaka's article on the authorship of Nyāyabindu in the Journal of the Bombay Branch of the Royal Asiatic Society, 1895, Vol. XIX, No. LI, pp. 47–57; also G. A. Jacob's Note on the authorship of Nyāya-bindu in the London Royal Asiatic Society's Journal, April 1905, pp. 361—362).

Hwen-thsang (*vide* Beal's *Buddhistic Record of the Western World*) mentions Jina as having been born in the country of Andhra in the south. We have already seen that Dignāga was born near the country of Kāñcī in the south, probably in the dominion of the Andhras.

The facts stated above go to show that Dignāga and Jina were the same person. As a matter of fact Jina seems to be only a Chinese phonetic equivalent for Dignāga.

Different names of Dignāga.

So it appears that *Dignāga* (Tibetan: phyogs-glaṅ) was variously named as *Jina* (victor) *Bhadanta*[1] (a venerable monk) and Ācāryya (as in Nyāyabindu, the Tibetan equivalent being Slob-dpon). He was also called *Mahādignāgārjuna* (*vide* Eitel's *Dictionary of Chinese Buddhism*), and is thus often mistaken for Nāgārjuna. This explains the fact that Nyāya-dvāra-tāraka-śāstra, really composed by Dignāga, has been attributed to Nāgārjuna. Dignāga also bore the title of *Tarkapuṅgava* (a fighting bull); while his Brāhmanic opponents gave him the title of *Ku-tārkika* (a quibbler).

Brāhmanic references to Dignāga.

Besides the allusion to Dignāga in Kālidāsa's Meghadūta[2] we come across several of his actual views criticised by such eminent authorities as Udyotakara, Vācaspati Miśra and others.

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[1] The word **Bhadanta** in the vocative case assumes the forms *Bhaddanta* and *Bhante*. Compare भद्दन्तस्स भद्दन्त भन्ते (२-४-३५) Kāccāyana, p. 141, edited by Satis Chandra Vidyābhūṣaṇa,). A junior monk should address a senior monk by calling him *Bhante* or Ayasmā. So Buddha says:—नवकतरेन भिक्खुना थेरतरो भिक्खु भन्तेति वा आयस्माति वा समुदाचरितब्बो (Mahāparinibbānasuttta, Bhāṇavāra, 6)

[2] अद्रेः शृङ्गं हरति पवनः किंस्विदित्युन्मुखीभिः
दृष्टोत्साहश्चकितचकितं मुग्धसिद्धाङ्गनाभिः ।

Udyotakara in his Nyāya-vārtika[1] mentions Dignāga under the name of Bhadanta, and describes him as a *Ku-tārkika.* Vācaspati Miśra, in his Tātparyaṭīkā[2] on the Nyāyavārtika has identified Bhadanta with Dignāga, has mentioned Dignāga by name and has tried to justify his appellation *Ku-tārkika.* Dignāga's definition of *Pratyakṣa* (perception) has been mentioned by Udyotakara and Vācaspati Miśra[3] thus :—**प्रत्यक्षं कल्पनापोढ़म्** । "Perception is (intuitive and therefore) exempt from reflection."[4]

स्थानादस्मात्सरसनिचुलादुत्पतोदङ्मुखः खं
दिङ्नागानां पथि परिहरन् स्थूलहस्तावलेपान् ॥
(मेघदूतम्, पूर्व्वमेघः, १४) ॥

The commentator Mallinātha says that *Dignāga* referred to in this verse was the Buddhist philosopher of that name.

यदक्षपादः प्रवरो मुनीनां
शमाय शास्त्रं जगतो जगाद ।
कुतार्किकाज्ञाननिवृत्तिहेतुः
करिष्यते तस्य मया निबन्धः ॥ (न्यायवार्त्तिक, पृः १,
edited by Vindhyeśvarī Prasāda Dube, in Bibliotheca Indica series).

[2] यद्यपि भाष्यकृता कृतव्युत्पादनमेतत् तथापि दिङ्नागप्रभृतिभिरर्वाचीनैः कुहेतुसन्तमस-समुत्थापनेन आच्छादितं शास्त्रं न तत्त्वनिर्णयाय पर्य्याप्तमित्युद्द्योतकरेण स्वनिबन्धोद्द्योतेन तदपनीयते इति प्रयोजनवानयमारम्भ इति । P.1, Nyāyavārtika-tātparyyaṭikā, edited by Gangādhar S'āstri

अपरे तु मन्यन्ते प्रत्यक्षं कल्पनापोढ़मिति । अथ केयं कल्पना नाम जातियोजनेति । यत् किल न नाम्ना अभिधीयते न च जात्यादिभिर्व्यपदिश्यते विषयस्वरूपानुविधायि परिच्छेदकमात्मसंवेद्यं तत् प्रत्यक्षमिति । ... अथास्य वाक्यस्य कोऽर्थो यदि प्रत्यक्षं व्याघातः कथं प्रत्यक्षं कल्पनापोढ़मिति चानेन वाक्येन अभिधीयते न चाभिधेयमिति कोऽन्यो भदन्ताद् वक्तुमर्हति ।

(न्यायवार्त्तिक, १-१-४, पृः ४३-४४) ॥

नहि यथा सम्यग्ज्ञानमधिकृत्य प्रत्यक्षादिलक्षणं कृतं कीर्त्तिना तथा दिङ्नागेन येनाधिकाराज् ज्ञाने व्यवतिष्ठेत कल्पनापोढ़मिति भावः
न्यायवार्त्तिकतात्पर्य्यटीका, १-१-४, पृः १०२) ।

[4] The same definition of *Pratyakṣa* (perception) occurs in Dignāga's Pramāṇasamuccaya. Compare the Tibetan version of the Pramānasamuccaya in the Tangyur, section Mdo, volume XCV, fol. 2a, quoted by Prof. De La

Regarding *anumāna* (inference)[1] Dignāga, according to Udyotakara and Vācaspati, says :—By seeing smoke, we do not, as it has been usually asserted, infer two things—*viz.*, (1) fire, and (2) the connection between fire and the place which is the abode of fire ; but we infer only one thing—*viz.*, the place as containing the fire.

Udyotakara and Vācaspati further inform us that Dignāga did not accept *upamāna* (comparison)[2] and *āptavacana* (testi-

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Vallee-Poussin in the Museon; *vide* Prof. Poussin's Extrait du Museon, p. 53. The definition runs as follows :—མངོན་སུམ་རྟོག་པ་དང་བྲལ་བ །

[1] किं पुनः अनेन धूमेन प्रतिपद्यत इति किमग्निम् उत देशम् उत सत्ता उताग्निमन्तं देशम् । .... अग्निमान् देश इति चेत् न धूमस्य अतद्धर्म्मत्वात् ...... (न्यायवार्त्तिक, १-१-५, पृः ५२) ।

अत्र दिङ्नागेन धूमादग्निरूपधर्म्मान्तरानुमानम् अग्निदेशयोः सम्बन्धानुमानं च दूषयित्वा अग्निविशिष्टदेशानुमानं समर्थितम् तथा चाह ।

केचिद् धर्म्मान्तरं मेयं लिङ्गस्याव्यभिचारतः ।
संबन्धं केचिदिच्छन्ति सिद्धत्वाद्धर्म्मधर्म्मिणोः ॥
लिङ्गं धर्म्मे प्रसिद्धं चेत् किमन्यत् तेन मीयते ।
अथ धर्म्मिणि तस्यैव किमर्थं नानुमेयता ॥
संबन्धेऽपि द्वयं नास्ति षष्ठी श्रूयते तद्वति ।
अवाच्योऽनुगृहीतत्वान्न चासौ लिङ्गसङ्गतः ॥

(न्यायवार्त्तिक तात्पर्य्य टीका, १-१-५, पृः १२०) ।

[2] प्रत्यक्षागमाभ्यां नोपमानं भिद्यते । कथमिति । यदा तावुभौ गोगवयौ प्रत्यक्षेण पश्यति । तदा ह्ययमनेन सरूप इति प्रत्यक्षतः प्रतिपद्यते । यदापि शृणोति यथा गौरेवं गवय इति तदास्य शृतवत एव बुद्धिरुपजायते केचिद् गोधर्म्मा गवये अन्वयिन उपलभ्यन्ते केचिद् व्यतिरेकिण इति अन्यथा हि यथा तथेत्येव न स्यात् भूयस्तु सारूप्यं गवा गवयस्य इत्येवं प्रतिपद्यते तस्मान्नोपमानं प्रत्यक्षागमाभ्यां भिद्यत इति । गवा गवयसादृश्यं प्रतिपद्यते गवयसत्तां वेति । अहो प्रमाणाभिज्ञता भदन्तस्य गवा गवयसारूप्यप्रतिपत्तेस्तु संज्ञा-संज्ञि-सम्बन्धं प्रतिपद्यते इति सूत्रार्थः । तस्मादपरिज्ञाय सूत्रार्थं यत्किञ्चिदुच्यते । (न्यायवार्त्तिक १-१-६, पृः ६०-६१) ।

तदीदृशमुपमानफलम् अविद्वान् सादृश्यज्ञानं सादृश्यविशिष्टज्ञानं

mony)[1] as separate forms of evidence, but included the former in perception and the latter in perception and inference. Dignāga criticised Vātsyāyana's inclusion of *manas* (mind)[2] among the sense-organs, while his own theory of *sāntaratva* (interstice or interval)[3] was criticised by Udyotakara and Vācaspati.

Dignāga is said to have cited an instance of inference contrary to perception, and his view was criticised by Kumārila Bhaṭṭa, as we learn from Pārthasārathi Miśra's gloss. on 59-60, Anumāna-pariccheda of Kumārila's vārtika on the 5th sūtra of Jaimini. Udyotakara and Vācaspati Miśra too[4] criticise the same view of Dignāga.

वो[नो]पमानफलमिति भ्रान्तो भदन्तो दिङ्नाग आक्षिपति । ... भदन्तभ्रान्तिमुद्घाटयति ।

(न्यायवार्त्तिक तात्पर्य्य टीका, १-१-६, पृः १३५) ।

[1] आप्तोपदेश इति किमाप्तानाम् अविसंवादित्वं वा प्रतिपद्यते आहोस्विदर्थस्य तथाभाव इति । यदि आप्तनाम् अविसंवादित्वं प्रतिपाद्यते तदनुमानात् । अथ अर्थस्य तथाभावः सोऽपि प्रत्यक्षेण । यथा ह्ययमर्थं प्रत्यक्षेणोपलभते तदा तथाभावमर्थस्य प्रतिपद्यत इति । तन्न । सूत्रार्थापरिज्ञानात् । नायं सूत्रार्थः । आप्तोपदेशः शब्द इति । अपि तु इन्द्रियसम्बन्धासम्बद्धेषु अर्थेषु या शब्दोल्लेखेन प्रतिपत्तिः सागमार्थः । तस्मादसम्बद्धोऽयं विकल्पः ।

(न्यायवार्त्तिक १-१-७, पृः ६३)

अत्र शब्दं प्रमाणान्तरमसहमानो दिङ्नागस्तल्लक्षणं विकल्प्य आक्षिपति । (न्यायवार्त्तिकतात्पर्य्यटीका १-१-७, पृः १८८) ॥

[2] तदनेन मनसश्चेत्यादि भाष्यं व्याख्यातं । तद्दूषितं दिङ्नागेन—
अनिषेधादुपात्तं चेदन्येन्द्रियरुतं वृथा ।

(न्यायवार्त्तिकतात्पर्य्यटीका १-१-४, पृः ९७-९८) ।

[3] यथोक्तं दिङ्नागेन । सान्तरग्रहणं न स्यात् प्राप्तौ ज्ञानेऽधिकस्य च ।

(न्यायवार्त्तिकतात्पर्य्यटीका १-१-४, पृः ७६-७७) ।

[4] यत् पुन र्दिङ्नागेन प्रत्यक्षविरुद्धमनुमानमुदाहृतं तदुपन्यस्यति । अपरे पुनरिति । अश्रावणः शब्दः कृतकत्वाद् घटादिवदिति श्रवणः शब्दस्वरूपमेवापलपति ।

(न्यायवार्त्तिकतात्पर्य्यटीका १-१-१, पृः ३१) ।

Jayanta in his Nyāyamañjarī (3rd āhnika, p. 131, Vizianagaram Sanskrit series) probably alludes to Dignāga in the subject called "Bhadanta-kalaha."

Buddhistic references to Dignāga.

I have already referred to the fact that Dharmakīrti wrote a commentary[1] on a certain work of Dignāga besides alluding to his logical views in the Nyāya-bindu. It was Dharmottarācāryya[2] who explicitly mentioned Dignāga sometimes under that name, but often under the name of Dignāgācāryya or simply Ācāryya. Jinendrabodhi[3] and others wrote commentaries on Pramāṇasamuccaya of Dignāga.

Dignāga's date.

The exact date of Dignāga is not known. On the authority of Mallinātha we have found that Dignāga was an opponent of Kālidāsa, and from Tibetan sources we have seen that he was a contemporary of one Īśvara-Kṛṣṇa who, I believe, was no other person than the celebrated author of the Sāṃkhya-kārikā. From Sanskrit sources we have further learnt that Dignāga was anterior to Udyotakara but posterior to Vātsyāyana, and that Kumārila Bhaṭṭa and Dharmakīrti flourished after the time of Dignāga. But these facts do not help us much, as the dates of most of these writers are unknown. From Chinese sources we know that Īśvara-Kṛṣṇa's Sāṃkhya-kārikā was translated into Chinese by Paramārtha 557-567 A.D. (Nanjio's Cat.,

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[1] Compare.

अयं च विरुद्ध आचार्य्यदिङ्नागेनोक्तः । सः कस्माद् वार्त्तिककारेण सता त्वया नोक्तः । (न्यायबिन्दुटीका पृः ७८) ।

[2] ननु आचार्य्येण विरुद्धाव्यभिचार्य्यपि संशयहेतुरुक्तः ।

(न्यायबिन्दुटीका, पृः ८४) ।

सत्यमुक्त आचार्य्येण । मया त्विह नोक्तः ।

(न्यायविन्दुटीका, पृः ८४) ।

क्व तर्हि आचार्य्यदिग्नागेनायं हेतु दोष उक्त इत्याह ।

(न्यायविन्दुटीका, पृः ८४) ।

तदाश्रयो विरुद्धाव्यभिचारी उक्त आचार्य्येणेति ।

(न्यायबिन्दुटीका, पृः ८५) ।

[3] Jinendrabodhi's commentary on Pramāṇa-samuccaya is named "Viśālāmalavatī nāma Pramāṇa-samuccaya-ṭīkā"—Tibetan ཡངས་པ་དང་དྲི་མ་མེད་པ་དང་ལྡན་པ་ཞེས་བྱ་བའི་ཚད་མ་ཀུན་ལས་བཏུས་པ འི་ འགྲེལ་ བཤད་ by སློབ་དཔོན་ རྒྱལ་དབང་བློས། It is contained in the Tangyur, section Mdo Volume Re.

1300). One of Jina's works was also translated about the same time and by the same translator (Nanjio's Catalogue i. 10). We have already seen that Jina was identical with Dignāga. These lead us to conclude that Dignāga flourished before 557 A.D.

From Tibetan sources we have further found that Dignāga was a disciple of Vasubandhu. Now Vasubandhu[1] was contemporary of Lha-tho-ri, King of Tibet who lived up to 371 A.D.[2] There seems to have existed a Sanskrit work[3] on the life of Vasubandhu which was translated into Chinese by Kumārajīva A.D. 401–409. These facts go to show that Vasubandhu lived in the middle of the 4th century A.D. and Dignaga about 400 A.D.[4]

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[1] *Vide* Pag-sam-jon-zang.

[2] Csoma De Koros's Tibetan Grammar, p. 182.

[3] Nanjio's Catalogue, Appendix i. 6.

[4] Mr. Takakusu in a very learned article on Vasubandhu, published in the Journal of the London Royal Asiatic Society, January 1905, fixes the date of Vasubandhu at about A.D. 920-500. According to this theory Dignāga must have flourished about 500 A.D. Takakusu's chief argument is that Saṃghabhadra was a contemporary of Vasubandhu (*vide* Hwen thsang, I-tsing, Paramārtha's Life of Vasubandhu, etc.), and was the translator of the Samantapāsādikā of Buddhaghosa into Chinese in 488 A.D.

29. *Vidyāpati Thākur.*—*By* G. A. GRIERSON, C.I.E., PH.D., D. LITT., *Honorary Member of the Asiatic Society of Bengal.*

I have read with great interest the account of the collection of Vidyāpati's poems, which is given by Bābū Nagendra Nāth Gupta on pp. 20 and ff. of the Extra No of Vol. LXXIII, Part I, of the Journal of the Asiatic Society of Bengal. He has been kind enough to refer to the small collection of songs published by me about twenty-three years ago. In order to facilitate his labours, may I state at once that I have learnt a good deal since then, and that I by no means maintain all that I wrote about Vidyāpati in 1882.

Bābū Nagendra Nāth Gupta refers to the deed of gift of the village of Bisphī as if he considered it to be a genuine document. I am afraid that this contention can hardly be sustained. The plate contains a date in the Faslī San, and that date was long before the Faslī era had been invented. He will find a facsimile of the grant in the Proceedings of the Society for August, 1895. My reasons for considering it to be spurious are given in full on page 96 of Vol. LXVIII (1899), Part I, of the Journal. See also Dr. Eggeling's Catalogue of Sanskrit MSS. in the India Office Library, Part IV, No. 2864.

The following list of articles on Vidyāpati may be useful:—

J. Beames. *The Early Vaishnava Poets of Bengal.* Indian Antiquary, II, 1873, p. 37.

J. Beames. *On the Age and Country of Vidyāpati.* Ibid. IV, 1875, p. 299.

Article in the *Baṅga-darśan*, Vol. IV, 1282 B.S. (Jyaiṣṭha), p. 75.

S'āradā-caraṇ Maitra. *Introduction to Vidyāpatir Padāvalī.* Second edition, Calcutta, 1285, B.S.

G. A. Grierson. *Vidyāpati and His Contemporaries.* Indian Antiquary, Vol. XIV, 1885, p. 182.

G. A. Grierson. *On some Mediæval Kings of Mithilâ.* Ibid. Vol. XXVIII, 1899, p. 57.

Paṇḍit Chandā Jhā, referred to by Bābū Nagendra Nāth Gupta, has published a useful edition of the Sanskrit text of the *Puruṣaparīkṣā*, together with a translation into Maithilī. It was printed at the Rāj Press, Darbhangā, in 1296 F.S. He has added a valuable Appendix dealing with historical questions, and containing frequent quotations from the *Kīrtti-latā*, a work of Vidyāpati partly written in the Maithilī of his time. If these quotations are correct, they show that the vernacular of the poet's time differed widely from modern Maithilī, and was rather a form of Prakrit.

I believe that Mahāmahōpādhyāya Paṇḍit Hara Prasād S'āstrī discovered a very old collection of Vidyāpati's poems in Nēpāl in the year 1899. He was kind enough to send me a copy of one of them, which showed much the same Prakritic appearance. I had published a current version of the same song in my edition of 1882, and the points of difference showed that there had been extensive modernization in the language of my copy. The same is no doubt also true with regard to all the genuine songs in my collection.

I am very glad to learn that an attempt is going to be made to publish a correct text of the dainty sonnets of the old Master-Singer, and I look forward to its appearance with pleasant anticipations.

30. *Some remarks on the Geology of the Gangetic Plain.*—*By* E. Molony. [With one plate.]

It requires no argument to prove that the present gangetic plain is the alluvial deposit of the river Ganges, and that the whole of the area of the gangetic plain south of the Himalayas must at one time have consisted of a network of morasses and river-channels very similar to the Sunderbans at the present time. It is also evident that, over the whole area of the United Provinces of Agra and Oudh, so far from the Ganges being at present engaged in raising its flood plain, it has become an agent of denudation, and has, long since, entered on the work of denuding the whole of its plain which lies above flood-level.

It may be taken as proved that this great change has been occasioned by the submergence of the area at the mouth of the river.

The period at which this important movement took place must have been very remote.

The river has eroded a bed in the old alluvium which is in many places several miles in width.

Within the limits of the former bed there is a considerable amount of later alluvium, but it varies very much from the older alluvium in its characteristics, and, in most places, there is a very well-marked line of demarcation between them

Most of the recent alluvium is liable to be flooded during high floods of the Ganges, though there is some which has never been flooded during the memory of man. This is probably due to deposit of sand and light soil by the action of the wind during the hot weather.

In the recent alluvium the substratum is nearly always pure river sand, the finer soils being deposited in shallow water where the current is usually less.

Another difference is that the recent alluvium never contains nodular limestone (*kunkar*), which occurs in most places in the old alluvial deposits.

I have perhaps made this assertion more positive than the text-books would appear to warrant, but I have never come across an instance in which *kunkar* was found in soil that clearly belonged to the recent alluvium, though I have occasionally found it in a locality near the boundary of the new and old alluvium.

The soil also differs, the recent alluvium being generally much more fertile, at any rate in the eastern portion of the United Provinces, where the recent alluvium contains a percentage of the black cotton soil brought down by the Jumna and its tributaries from Central India.

The area that lies between the extreme limits up to which the Ganges has excavated its bed in the old alluvium may be styled the "Khādir."

Having had good opportunities for observation in the Ghazipur

TRACING FROM THE MAP OF THE GHAZIPUR DIS^TT CORRECTED UP TO 1882 SH WING THE LIMITS OF THE GANGES KHADIR

N
SCALE OF MILES
Furlongs 8 6 4 2 0 1 2 3 4 5 6 Miles.
GOMTI R.
GAURI
TATARPUR
RAMPUR
PATNA
SAIDPUR
GANGES RIVER
DUBITHA
NEKNAMPUR
AMADPUR
CHOCHAK PUR
PARMET
GANGI NADI
PARANDA
ZAMANIA
BARESAR
GHAZIPUR
BESON
JALLAPUR
MOHAMMADABAB
MANGAI NADI
Boise
SONARI
PIHULI
PARSADA
SHER PUR
NEKROZ P.
KORANTA DIH
BIRPUR
CHAUSA
BARA
KARMNASA R.
GOPAL P.
UBHRAN PUR
NAGSAR
UTHULI
GADAIPUR
ASOON
GOHDA BISHUNPURA
BASKA

District, I have marked in on a map of the district the limits of the "Khādir."

I may say that in some places the limit of the "Khādir" is exceedingly plain, whereas in other places it is not at all so plain to the eye.

However, by tracing the line from one curve which is well defined and following slight indications, it is almost always possible to follow the line till it reaches another point where the indications are again quite unmistakeable.

In the Ghazipur district the only part where, in my opinion, the line is really doubtful, is the western edge of the island of old alluvium opposite the confluence of the Ganges and Kărmnāsa. Both the northern and the southern edges of that island are extremely well defined as far west as a line drawn north and south just west of Birpur; but the western edge is very ill-defined.

In my opinion, two causes have united to create this difficulty. The first is the proximity of the deep stream of the Ganges within comparatively recent years, which has led to a great accumulation of water-borne material; and the second is the proximity to the west of the boundary of a large sandy tract whence a considerable amount of material has probably been blown by the strong west winds which prevail during the early part of the hot weather.

It is clear that at any particular time each bank of the river must have concave bends alternating with convex bends. Centrifugal force throws the current against the concave bends and away from the convex bends. Erosion, therefore, only takes place at the concave bends, and this is the reason why the edge of the "Khādir," as delineated on the map, does not contain any convex bends.

The fact that these concave bends, which form the limits of the "Khādir," are not connected by convex bends, but cut each other at various angles, proves that no two adjacent bends could have been made at the same time.

The width and shape of the "Khādir" opposite the town of Ghazipur show that there must have been many complete alterations in the course of the river.

Between each of the alterations in the course of the river, indicated by the indentations in the edge of the "Khādir," a very long period must have elapsed.

Although the vagaries of the Ganges are proverbial, it must be borne in mind that, whenever the river impinges on the old alluvium, the process of denudation is very slow.

In the new alluvium the river often cuts away three or four hundred feet in a year, but in the old alluvium, whenever the river impinges on reefs of *kunkar*, there is practically no denudation.

Even where the river impinges directly on the stiffish clay (without any *kunkar* reefs to protect it), which is the prevailing soil in the Ghazipur district, the denudation, as will be shown later, does not exceed ten feet in the year.

It will be noticed that all sharp bends of the river are in the old alluvium, and that the main direction of the river's course is determined by the bends in the old alluvium. Although, in the new alluvium, the river does, at times, rapidly make considerable changes in its course, yet its general direction remains constant for long periods of time, owing to the fact that it is determined by the bends in the old alluvium, which alter very slowly.

There is no historical record of the river ever having been at any distance from either Zamania, Ghazipur or Chausa, although the configuration of the "Khādir" shows that, at some past period, it must have been several miles distant from each of these places.

The same probably holds true of both Benares and Chunar. At the time of the battle of Chausa, where Humayun was defeated in 1539 A.D., the point of confluence of the Ganges and Kărmnāsa must have been at the same place as at present, though it is clear, from the island of the old alluvium just opposite, that, at one time, the Ganges must have been flowing a considerable distance to the north, and the confluence of the Ganges and Kărmnāsa must have been east of Buxar. There is, therefore, unmistakeable historical evidence that there has been no radical alteration in the course of the Ganges in the Ghazipur District for close on four hundred years.

At Chochakpur there has been very little alteration in the course of the river. The configuration of the "Khādir" in the reach between Chochakpur and Zamania can be accounted for by supposing that between Chochakpur and Karanda the river originally flowed nearly east to west, and that the great bend at Zamania has been the result of gradual and continuous erosion by the river.

The distance between Karanda and the point of the bend at Zamania is 72 miles or 39,000 feet.

Allowing 4,600 feet as the original width of the river, this would give a distance of 35,000 feet which has been eroded by the river.

The first survey was made of the district in 1840. From that time to 1872 Mr. Oldham records in his Memoirs of the Ghazipur District that the annual rate of erosion was 12 feet (*vide* p. 3 of Oldham's *Memoirs of the Ghazipur District*). Since the last survey, made in 1882, the annual rate of erosion has been 9 feet. This gives an average of close on 11 feet a year for the last 64 years.

At this rate the erosion of the Zamania bend would require about 3,200 years. At the Zamania bend the soil is the ordinary stiff clay found in the district without any *kunkar* reefs. There is, however, a *kunkar* reef at Zamania town, and very solid *kunkar* reefs at Ghazipur.

Another noteworthy feature shown by the map is the island of old alluvium opposite Chausa surrounded on all sides by the "Khādir."

It is stated in Mr. Oldham's Memoirs that a similar island exists in the Benares District opposite Saidpur. I have not had an opportunity of verifying the statement, and have not therefore shown it on the map.

Mr. Oldham's is the only possible explanation, *viz.*, that the river Ganges has gradually eroded the land at some bend in its course till it has cut into the course of the affluent at a point above the former confluence.

When once a channel had been made into the course of the affluent, centrifugal force would drive the water of the Ganges through the breach so made, and the new channel would rapidly be widened out till it became the main course of the Ganges.

The island opposite Chausa must have been caused by the Ganges usurping the course of the Kărmnāsa, and that opposite Saidpur by the usurpation of the course of the Gumti.

Similarly, tradition, which Mr. Oldham considered trustworthy, says that, at one time, the water of the Gogra passed down the present river Sarju, or Tons as it is sometimes styled, which separates the Ghazipur and Ballia Districts. This would indicate that the Ballia District consists of a similar island caused by the river Gogra (or Sarju as it is called in some parts) usurping the course of some smaller river that used to flow down the present bed of the Gogra.

Any such usurpation of another river's course would probably completely alter the set of the current at the old confluence, and release the river from the bends in the old alluvium which had formerly given the river its general direction.

At the commencement of the paper it was taken as already proved that the area at the mouth of the Ganges was an area of subsidence.

There are, however, indications that within the area of the United Provinces of Agra and Oudh the southern portion of the Gangetic plain has sunk relatively to the northern portion.

The first piece of evidence is that supplied by the artesian well sunk at Lucknow. (*vide* Oldham's *Geology of India*, p. 434.)

At a depth of 158 feet the water stood at 61 feet below the top of the borehole. At a depth of 975 feet the water had risen to 2 feet. At 990 feet it stood at a depth of 5 feet below the top of the borehole, and at 1,189 feet the water rose over the top of the casing, itself 24 feet above the surface of the ground.

This shows that the lower strata must be inclined, though it does not indicate the direction of the dip.

As the Himalayas are known to have risen and the Gangetic plain to have sunk, the probability is that the dip of the strata is from north to south.

A river flowing over a flat alluvial plain would naturally find its way directly down the slope, and there is no reason why the watershed should not be equidistant from either bank.

If, however, after the river had excavated a channel for itself with the watershed equidistant from either bank, the whole alluvial plain through which it flowed was slightly tilted at right angles to the river's course, the result would be that the slope into the river from one bank would be increased, while the slope to the other bank would be decreased. Consequently, denudation on one side of the river would be greater than on the other. The same thing would happen to all the rivers flowing on parallel courses. Thus, in the area between two rivers which run on nearly parallel courses, the denudation into one river would be greater than into the other. Each river would, in time, force the water-shed on one bank back towards the next river, but, in exchange, would lose on the other bank an equivalent in its catchment area.

The result would be that each river would have a larger catchment area on one bank than on the other. This appears to be the case in several districts of the United Provinces with which I was acquainted.

Canals are generally aligned to run along the water-sheds, and in the following cases the canals are aligned very near the rivers running parallel to them on the north side :—

(*a*) The main upper Ganges canal in the Aligarh District is very much nearer the Kali Naddi on its north than the Jumna on the south.

(*b*) The Anupshahr branch of the Ganges canal in the Aligarh District is very much nearer the Ganges on its north than the Kali Naddi on its south.

(*c*) The projected Sarda canal in the Lucknow District was aligned very much nearer the Gumti on its north than the Sai on its south.

The fact that, at Lucknow, water from a great depth rose to above the surface, shows not only that the strata at great depths are inclined, but that they are continuous over very considerable distances.

This is a very interesting fact, because it has been conclusively shown that the surface strata are not continuous.

For certain reasons too technical to be given here a good irrigation well can only be made where the masonry cylinder can be taken down to a firm clay stratum underlaid by waterbearing sand.

A good deal of attention has therefore been paid to the strata near the surface, by which I mean down to a depth of say 125 feet.

Colonel Clibborn was deputed in the seventies to make an examination into the subject of wells, and, in his report published by the Board of Revenue of the North-West Provinces and Oudh, in a collection of papers relating to the construction of wells, it is clearly demonstrated that the clay strata so essential to the success of wells are not continuous.

I might add that anyone practically acquainted with the construction of irrigation wells knows that Colonel Clibborn's conclusions are correct.

A very difficult problem is here presented to us ; how can we account for the fact that the surface strata are clearly not continuous, while those at great depths appear to be continuous ? Two possible explanations suggest themselves ; the first is that at great depths, the pressure of the superincumbent earth renders impervious to water everything but the coarser and cleaner kinds of sand.

Extensive and continuous deposits of such sand would only be found along the beds of the larger rivers which may be presumed to have existed though they have been long since deeply buried by alluvial deposits.

If a deep borehole struck such an old river-bed, it is conceivable that the necessary head to bring the water to the surface might be supplied through a deposit of sand in the former river-bed continuous up to a point in its uppper course where it attained the necessary elevation.

The observed facts at Lucknow do not, however, support this explanation, as there were several rises in the level of the water in the borehole, and it seems unlikely that one borehole should have struck the beds of several such former rivers one above the other.

The second possible explanation is that the surface deposits were laid down in running water and the deeper deposits in still water. Anyone acquainted with the country can see in the crescent-shaped swamps and the alternations of clay, light soil and sand on the surface of the country, the result of the same agency that is reproducing similar features in the alluvium of the great rivers, namely deposition by running water; and the inference is inevitable, that the surface of the country was formed by the deposit of the material derived from the mountains in a labrynth of vast morasses amd deltaic rivers.

This agency, however, would not explain the enormous area of clay and sand revealed to us by the Lucknow borehole; and it seems necessary to assume the existence of an enormous sheet of water with currents sufficient to transport sand great distances to account for the phenomena.

In Oldham's *Geology of India*, p. 144, the occurrence of a species of fresh-water porpoise, common only to the Ganges and Indus and their tributaries, is cited as showing that the Ganges and Indus flowed at one time into the sea through a common delta.

The sea is shown to have extended up the Indus valley within a geologically recent period; and it seems possible that it may have extended east much further into the gangetic plain than is usually supposed.

The absence of any indications of marine origin in the upper strata might well be due to their having been deposited in fresh water after the communication with the sea by the Indus valley had been cut off.

At any rate, whether the water was fresh or salt, the continuity of the deeper strata over great distances seems to strengthen the theory that the lower strata were deposited in a great sheet of still water.

Such a great sheet of water, originally salt but gradually becoming fresh as the communication with the sea became gradually more and more obstructed, would satisfactorily account for the change of the salt-water porpoise into an animal inhabiting fresh water.

31. *The Nafāīsu-l-Maās̤ir—By* H. Beveridge, I.C.S. (retired).

Among the Elliot manuscripts in the British Museum there is a volume which contains, among other things, about a hundred pages of an extract from the Nafā'isu-l-Maās̤ir. It is numbered Or. 1761 and is described at p. 1022*a* of vol. III of Rieu's Persian Catalogue. The title Nafā'īsu-l-Maās̤ir may be rendered "Choice Deeds," and is a chronogram implying that the book was begun in 973 (1565–66). It is stated by Dr. Sprenger that a postscript gives 979 as the date of the completion of the work, but that much later dates are mentioned in it. The work was a biographical dictionary of Persian poets and was written by Mīrzā 'Alāu-d-daulah Qazvīnī, the younger brother of Mīr 'Abdu-l-lat̤if, who was for a time Akbar's preceptor. 'Alāu-d-daulah was himself a poet, and wrote under the name of Kāmī. He is described by Badayūnī at pp. 97 and 316 of the third volume of his history. A copy of the original work was seen by Dr. Sprenger in the Moti Mahall Library in Lucknow, and he has described its contents at pp. 46-55 of his Catalogue; but apparently the manuscript was lost in the Mutiny, and there does not seem to be any copy in our public libraries. It is to be hoped that a copy will turn up in India some day for the work was a valuable one and was the basis of Badayūnī's third volume. Sprenger states that the book contained notices of about 350 poets, most of whom flourished in the time of Akbar. He also gives the index of the names. Fortunately the Elliot MS. contains the historical introduction which gives an account of the reigns of Bābar, Humāyūn and Akbar. The account of Akbar is the fullest of the three, but only goes down to 982 or 1575, *i.e.*, to the twentieth year of the reign. Though the historical introduction is only a sketch, it gives here and there useful bits of information, and it is valuable as being, apparently, the earliest written of all the lives of Akbar. Like his father Mīr Yahyā, the author of the Labb-u-tawārīkh, 'Alāu-d-daulah is very fond of chronograms, and gives many of them in his introduction. Among others he gives the well-known one about Bābar's birth, and adds that it was composed by Maulānā Jāmī. This cannot have been the great Jāmī. On p. 26*b* he speaks of Bābar's religious poem, and corroborates Sprenger's statement that it was entitled "Dar Fiqh." He adds that it was sent to Ḥaẓrat Imām A'z̤am, who is probably the same person as the Maqdūm A'z̤am of Transoxiana whose name is mentioned in Ney Elias's history of the Khojas. That is, he is probably one of several Maqdūm A'z̤ams, for the name was borne by more than one saint. At p. 33*b* we have the statement that Humāyūn conversed in Herat with the writer's father, here called Amīr Nāṣiru-d-dīn Yahyā. At p. 37*b* mention is made of a Khwājah Qāẓī who was Humayun's prime minister and who, unless he be the same as Khwājah Ghāzī, does not seem to be named by other authorities. It is added that he belonged to the family of the famous enthusiast Shams-i-Tabrīzī. The account of Humāyūn's death gives one or two new details. In the first place it says that the accident of the fall from the roof occurred on Friday the 16th Rabī-al-awwal, and not on the 11th, and that he died on the following Sunday the 18th. Then it adds, p. 37*b*, that Humāyūn was wrapped in a blanket, or dressing-gown (*galīmwār*) at the time, and was leaning on his staff when the latter slipped on the stones. When he came to his senses, he repeated the *Kalima*. Then follow several chronograms. K͟hiẓr K͟hwājah K͟hān, the husband of Gulbadan Begam, is mentioned as one of those who concealed the fact of the death for some days.

In the account of Akbar's conquest of Ḥājīpūr we are told that Rajah Gajpati (of the Dumraon family) assisted with 2,000 Cherus, and in mentioning Dā'ūd's escape by boat from Patna on the night of Sunday 21 Rabī-aṡ-ṡānī the new circumstance is given that he fled to Tānda. When the bridge over the Pūn Pūn was broken down by the flying Afghans, some 2,000 of them were killed.

The Elliot MS. gives, besides the introduction, a few extracts from the notices of poets in the body of the work. Among them is the interesting account of Wafāī, *i.e.*, Zainu-d-dīn K͟hwāfī, who was Bābar's Ṣadr, or ecclesiastical judge, and who translated, or paraphrased Bābar's Memoirs. It is this account which has been borrowed by Badayūni (see Dr. Ranking's translation, p. 609).

I hope that this notice may lead to the discovery of the original work, and if not, that someone will publish the extracts in the Elliot Manuscript.

24th July, 1905.

32. *Notes on the Species, External Characters and Habits of the Dugong.—By* N. ANNANDALE, D.SC., *Deputy Superintendent of the Indian Museum.* [With three plates.]

The present communication is largely of the nature of a preliminary notice. Later I hope to offer to the Society a memoir on the anatomy of certain organs and structures in the Dugong, which will be based partly on the specimen whose measurements are given below, and partly on the fine collection of Indian and Australian skulls and other bones already in the Indian Museum. At present I feel confident in stating (with four fully adult Indian, two fully adult Australian, and parts of three immature Indian skulls before me) that the individual variations among Indian specimens are at least as great as those which were believed by Owen to constitute a specific difference between Indian and Australian species. Skeletons of the Dugong exhibit very great differences (not solely connected with sex and age) *inter se*, and these cannot be specific, as they are not constant even in a series from the same seas. Owen's *Halicore australis*, therefore, must be relegated, as most recent mammalologists have thought probable, to the synonomy of *H. dugong.*[1]

In the summer of 1905, I was deputed by the authorities of the Indian Museum to visit the northern part of the Gulf of Manaar, in order to obtain a complete skeleton and skin of an Indian specimen of the Dugong, the only skins hitherto in the collection, and the most nearly perfect skeleton, having been obtained from Queensland in exchange with the Brisbane Museum. Thanks largely to the kind offices of the Rev. A. D. Limbrick, of Rámanád, I was so fortunate as to obtain a fine male, the external characters of which are described below :—

Dimensions—

1	Length to tip of tail	9 ft.,	6 in.
2	Length to extremity of fluke ...	9 ,,	11 ,,
3	From posterior border of anus to tip of tail	3 ,,	4 ,,
4	From anterior border of anus to genital opening ...	1 ,,	5 ,,
5	Length of flipper	1 ,,	8 ,,
6	Width of flipper		10 ,,
7	Breadth of fluke (injured at one extremity)	2 ,,	10 ,,
8	Height of facial disk		8 ,,
9	Breadth of facial disk ...		11 ,,
10	Length of upper lip (upper jaw pad)		6½ ,,

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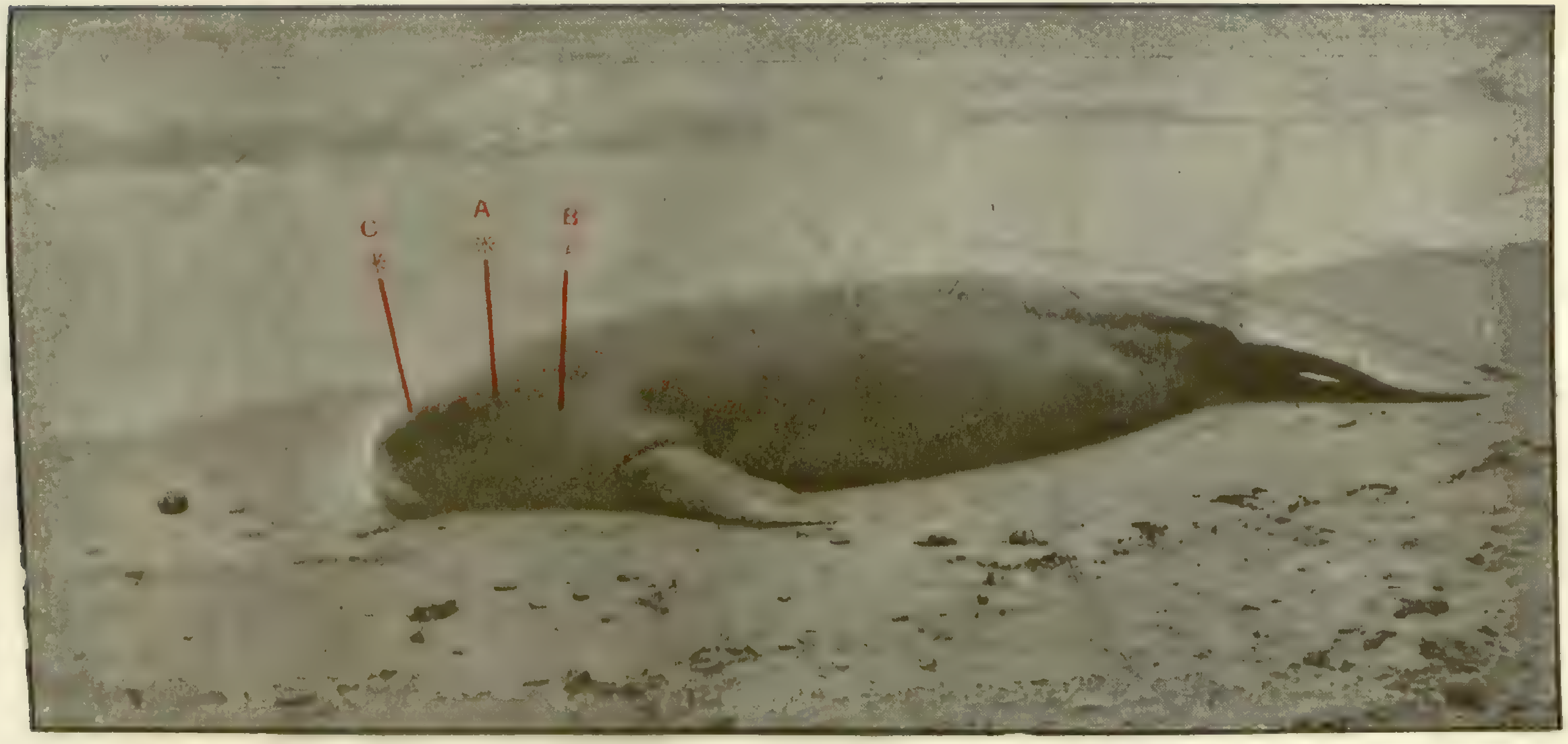
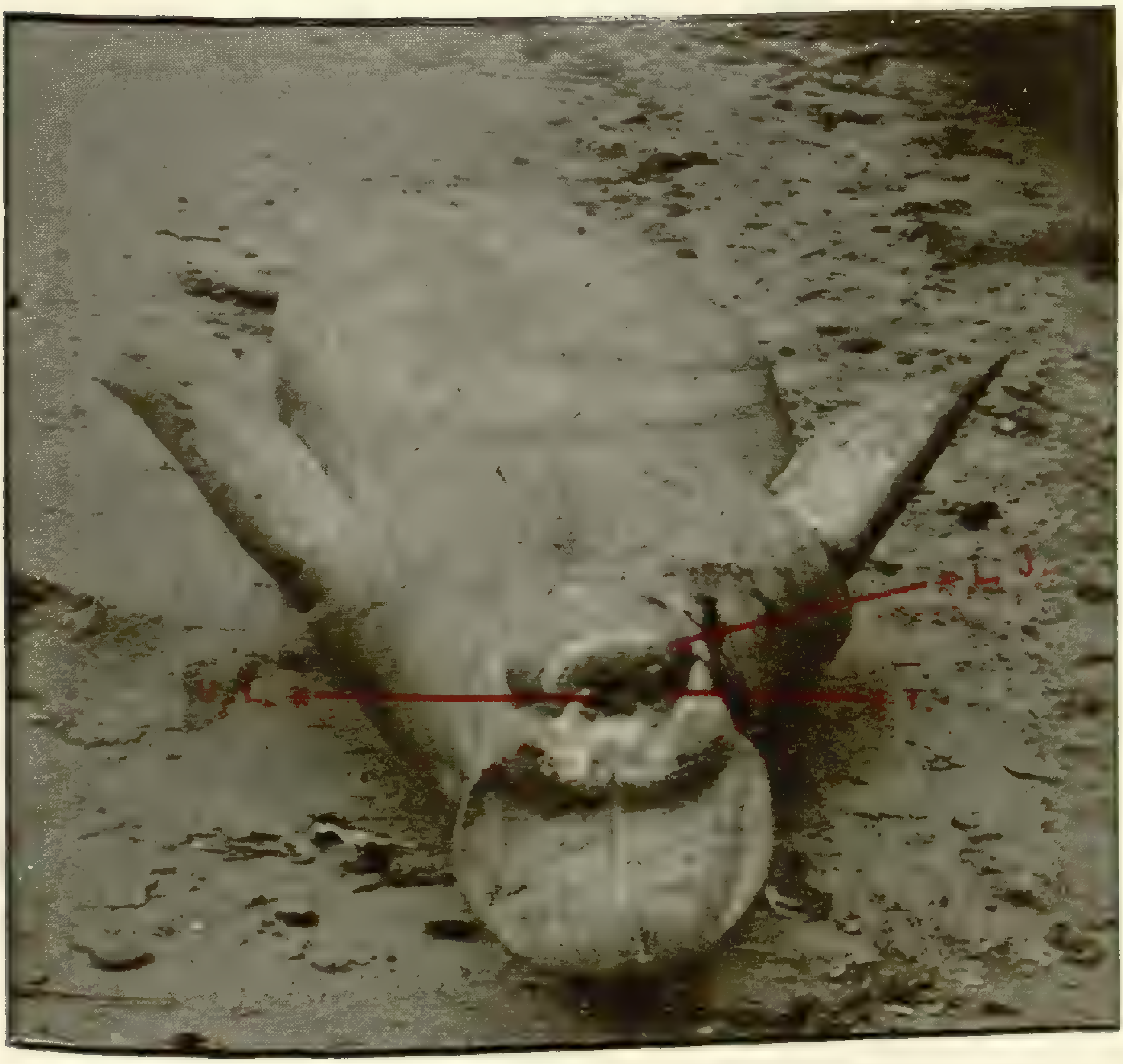
[1] Strictly speaking, the specific name should be *duyong*, in accordance with the Malay; but the incorrect form is so well known that it seems better not to change it.

PLATE VII.

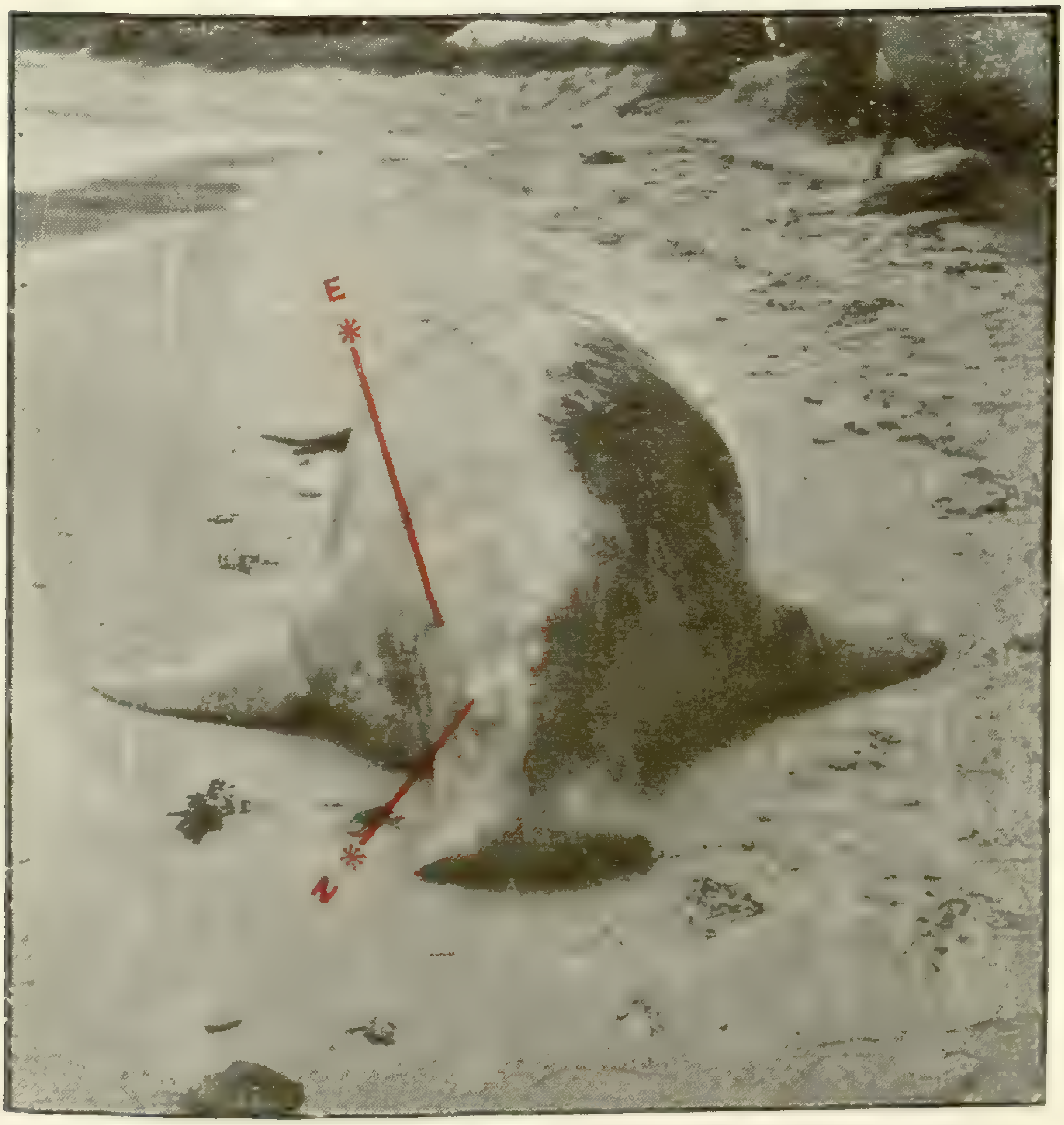


A = Eye. B = Ear.
C = Nostril.

PLATE VIII.



U.L. = Upper Lip (Upper Jaw Pad).
T. = Tusk.
L.J. = Lower Jaw.



E. = Eye.
N. = Nostril.

In this table and throughout the paper the "tip of tail" means the extremity of the actual tail. The length between this point and the extremity of the snout was measured by means of sticks stuck into the sand. The "length to extremity of fluke" was obtained by drawing a straight line immediately in front of the snout and another parallel to it immediateiy behind the uninjured extremity of what may be called, on the analogy of the Cetacea, the fluke. The posterior margin of this organ being concave, the latter measurement is considerably the greater. The third measurement given practically represents the length of the tail, which is a little less than half that of the head and body. This observation is perhaps of some importance, as the pads of stout connective tissue intervening between the dorsal vertebræ are of considerable thickness, although there are no bony epiphyses. Consequently, skeletons, as set up in museums, very often do not represent anything approaching the true length of the animal. By the "facial disk" I mean the flattened area, which does not include the nostrils, above the tusks. It will be described in detail later. What I have called the "upper lip" is plainly the homologue of what Murie and others have called the "upper jaw pad" in the Manatees; but it is better developed in the Dugong and probably plays a more important part in the assimilation of food.

Colour—

The dorsal surface, shortly after death, was a dull brownish grey, which faded gradually, though pure grey on the sides, to dirty flesh-colour on the belly. The face, flippers and fluke were dull grey; but the skin round the base of the tusks and the upper lip was mottled with dirty flesh-colour, which was also the tint of the lower jaw. Judging from the different descriptions given by different observers, the coloration of the animal is as variable as I find its skeleton to be.

Integument—

The skin of the specimen had not the corrugated and wrinkled surface of that of the Manatees; but, on the other hand, it had not quite the smooth and oily appearance of that of many of the Cetacea. It was smooth, as it were, but not polished. Undoubtedly the hair, especially on the back, contributed to this effect, giving the animal quite a prickly appearance in certain lights. I shall here state merely that three distinct kinds of hair existed on the external surface, two on the facial disk and lower jaw, and a third over the whole of the trunk, limbs and fluke, the the kind last mentioned having two distinct phases of growth. The hairs are apparently devoid of pigment. The general character of the integument, apart from the hairs, resembled that of tropical Cetacea, the "blubber" being less thick than that of northern Porpoises. No oil was set free by cutting through it. Beneath it, however, there was a layer of opaque white fat very like that of a pig in appearance.

General Characters of the Trunk and Limbs—

The general form differed very considerably from that of all Cetacea, resembling that of some of the larger Eared Seals in several points. The appearance of the animal was clumsy, and evidently not adapted for rapid motion of any kind, the back and sides being rounded and the belly flat. There was no apparent neck, but the head was massive and terminated bluntly in front. The tail was distinct from the trunk, having a more compact and a less amorphous character. The vertebral column extended to the tip, which projected slightly below the edge of the fluke. The latter organ was deficient as regards one extremity, which had been removed, probably by the bite of a shark. The wound had healed completely. Running from near the tip of the tail to a point near its commencement was a conspicuous ridge formed chiefly by a thickening of the epidermis. This was about two inches high near the centre. It is well shown in the photograph reproduced on plate 7. The fore-limbs were regular in outline, flattened, with a distinct posterior fringe, but with no trace of separation of the digits externally. Only the fore-arm projected externally, the humerus being buried in the body as far as the articulation of the radius and ulna. There was a conspicuous fold of skin immediately above the limb. The mammæ, which were large considering the sex of the individual, were situated immediately behind the limb, almost on a level with its posterior edge; they were long in comparison with their diameter. Judging from a female, otherwise correctly mounted, in the Colombo Museum, this elongated character of the mammæ is characteristic of both sexes. The lateral position is apparently characteristic of all living Sirenia. Native fishermen tell me that in the lactating female the milk squirts out with great violence to a considerable distance if the mamma is pressed. The copulatory organ, of which Dr. Francis H. A. Marshall, of the University of Edinburgh, has kindly promised to furnish a description later, was entirely withdrawn into the body.

Head—

The head of the Dugong is perhaps its most characteristic feature, but all the figures of the animal, including some very recent ones, that I have been able to discover, are incorrect as regards this part, at any rate if they are intended to represent adult males. The only mounted specimens I have seen which are at all correct are those in the Colombo Museum; but these are a female, a half-grown male and a newly (probably prematurely) born young one. Except as regards the tusks, they agree very fairly well with my notes and photographs.

The mouth of the specimen was very small. It was tightly closed by the upper lip ("upper jaw pad") which projected over the lower jaw, the lower lip being represented merely by a thin fold of skin. The upper lip was stout in shape, flabby in structure, in the newly-killed specimen; tongue-shaped, smooth and hairless on the surface. The tusks, one of which was broken, projected through the skin above it, not from the mouth, as has been stated. The curious projection of the anterior part of the lower jaw was only covered by a thin layer of skin and connective tissue; it is the rounded structure which looks like a heavy lower lip in fig. 1, plate 8. Above the tusks the integument expanded into a large flattened disk, which was divided into two halves by a vertical cleft. This cleft also extended along the base of the upper lip between the tusks. The lower part of the disk bore two broadly raised transverse ridges, which were divided from one another by the cleft and covered with bristles comparable to, but shorter and blunter than, the spines of a Porcupine. These ridges are evidently the homologues of the two lobes of the "upper lip," by means of which the Manatees crop the plants on which they feed. They do not appear to be either so mobile or so widely separable, however, in the Dugong. Above them the disc was covered with longer and finer bristles, evidently of a sensory nature. The upper edge of the disk was turned backwards and upwards, and there was a more or less inturned flap on either side. The nostrils were entirely outside the disk, on the top of the head: they were crescentic in shape and could evidently be closed during life. The tissues surrounding the eye were somewhat prominent; but the eye itself was small, black, beady and deeply sunk. It was not surrounded by radiating wrinkles as in the Manatees. The presence of large glands in connection with it afforded some justification for the Malays' belief[1] that the Dugong weeps when captured. The external ear was extremely minute, being a circular aperture less than 10 mm. in diameter.

Habits—

It seems probable that the habits[2] of the Dugong have changed considerably within the last half century, together with the diminution in its numbers noted by Blanford and others. Only having seen a freshly-killed specimen, I am not in a position to say anything on this point from actual observation, but from what I was told by the native fishermen, who possess special nets for the capture of the Dugong, it is rare nowadays for more than one specimen to be taken at a time, whereas formerly, in the Gulf of Manaar, flocks of many hundreds were said to occur. Further, the animal appears to have ceased to frequent shallow water, for, according to the fishermen, the only specimens they see near the shore are those which have been wounded or are sick. I was unable to discover the depth at which those taken for the market are usually captured; but a gentleman who has visited the Dugong "fisheries" off the northern coast of Queensland, tells me that in Australian waters the usual depth is from the ten to twelve fathoms. In the Gulf of Manaar stout nets, very deep, with a large mesh and heavily weighted, are sunk in the neighbourhood of the animal's known feeding-places, and individuals of both sexes, but apparently more especially young ones, become entangled in them and are thus taken. Occasionally specimens are even captured in the ordinary drift nets used in catching fish. I was told that as many as sixty were sometimes brought into Kilakarai, a large native port near the northern corner of the Gulf on the Indian shore, in a year; but this number is probably exaggerated. The Muhammadans of the district are so fond of the flesh[1] that they give large prices for it, and probably the fishermen who possess the right kind of nets go in pursuit of the Dugong as often as they have nothing else to do; for the search is precarious, but the profits considerable should it be successful.

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[1] They regard the tears of the *íkan duyong* ("Dugong fish)" as a powerful love-charm. Muhammadan fishermen on the Gulf of Manaar appeared to be ignorant of this usage, but told me that a "doctor" once went out with them to collect the tears of a Dugong, should they capture one. Though they do not call the animal a fish, they are less particular about eating its flesh than are the Patani Malays and the Trang Samsams, who will not do so unless the "fish's" throat has been cut in the manner orthodox for warm-blooded animals. The common Tamil name for the Dugong is *kădălpūdrū* ("sea-pig"); but the fishermen at Kilakarai (Lubbais) call it *ăvīllīah.*

[2] These remarks refer only to the Gulf of Manaar. Major A. R. Anderson informs me that in the Andamans, Dugongs still enter Port Blair harbour occasionally in parties of two or three. *Dec.* 15*th*, 1905.

As regards the food of the Dugong, it has often been stated, but not by Blanford, that it feeds exclusively on a marine phanerogamous plant. This is evidently not the case, as the stomach of my specimen was full of pieces of a green alga, all of which belonged to one species. Two things struck me about the contents of the stomach and the upper part of the intestines: (1) their freedom from all adventitious growths, either animal or vegetable, and (2) their perfect and unbruised condition. They consisted of clean pieces of seaweed about 2½ inches long, plucked off and evidently not masticated. Even the little bladders which the seaweed bore had not burst. As regards the method of feeding, I do not think that it can be the same as that of the Manatees, which pluck the plants which they eat by means of the two lobes above the "upper jaw pad," and push their food towards the mouth with their flippers. Similar lobes certainly exist in the case of the Dugong, but they did not appear in the fresh specimen to be capable of any great degree of separation or movement, while the flippers are hardly long enough to give any great assistance in feeding. As the "upper jaw pad" (upper lip) itself, on the other hand, was evidently freely moveable and possibly to some extent extensile, it seems possible that it is used in plucking seaweed, which certainly could be grasped between it and the lower jaw. This would necessitate the food being passed under the horny pad, with its bundles of more or less consolidated hairs, on the anterior part of the palate. Possibly these hairs may have the function, as they certainly have the appearance, of the bristles of a scrubbing brush. I have already noted the small size of the mouth, and I believe, judging from the small area of the articular surface of the lower jaw, as well as from observations on the fresh specimen, that the jaw has very little, if any, lateral movement. For all these reasons I doubt whether the persistent teeth have any function beyond crushing the calcarious or other growths brushed off the seaweed by the hair-papillæ of the anterior palate.

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[1] The meat is excellent; roasted, I could not have distinguished it from good, but rather tough beefsteak. It had none of the peculiar flavour of whale-meat. Moreover, it has the same quality as that assigned, both by the old voyagers and by modern observers, to the flesh of the American Manatees —it keeps good for a considerable time, for at least three days in hot weather, during which mutton goes bad in twenty-four hours. The blubber is not made into oil at Kilakarai.

The fishermen told me that they took females with young ones accompanying them at all times of year, but never more than one young one with each female. They had never seen the female raise the upper part of her body vertically from the water, clasping the young one in her flippers, which seem hardly suitable for the purpose. Judging from the scars on the specimen examined, I believe that the males fight with their tusks at the breeding season.

32. *Hedyotis sisaparensis, a hitherto undescribed Indian species.—By* CAPTAIN A. T. GAGE. I.M.S.

The writer when re-arranging the earlier genera of Rubiaceæ in the Calcutta Herbarium in 1902, came across what appeared to be an undescribed species of Hedyotis. The writer's opinion was confirmed by Sir George King, who kindly compared the species at Kew. The description written in 1902 is now offered for publication.

Hedyotis sisaparensis.—Undershrub with branches about as thick as a crowquill, glabrous, pale grey almost white, four angled; internodes much shortened in the region of the infloresence and hidden by the stipules. Stipules about 9 mm. long, pectinate, scurfily tomentose, and showing a few raphides. Leaves shortly-petioled, lanceolatet acute, base narrow cuneate tapering into the glabrous petiole; lamina glabrous on both surfaces, upper surface bright green, lower grey, with abundance of raphides; midrib on lower surface of lamina flattened out, white; lateral nerves 4-6, rather faint, running forward at an acute angle with the midrib; length of lamina 5-8·8 cm., breadth 1·25-2·5 cm, length of petiole 6·5 mm.-1·25 cm. Flowers in axillary bracteate cymes of about 4·5 cm. in length; main peduncle 1·8 cm. long; bracts about 5 mm. long, flowers pseudo-pedicellate in groups of three on the secondary peduncles. Calyx including lobes 8 mm. long, lobes 4, subulate, equalling the length of the calyx-tube, but exceeding the capsule. Corolla, unopened, exceeding the calyx tube, lobes 4. Stamens 4. Ripe capsule 3 mm. in diameter, glabrous, dehiscing septicidally. Seeds not seen.

Wynaad, *Beddome.* Above Sisapara, Nilgiri district, 7,000 feet alt. *Gamble*, No. 13381.

The affinity of this species is with H. mollis, *Wall.*, from which it is easily enough distinguished by its infloresence.

34. *An Examination of the Nyāya-Sūtras.—By* HARAPRASĀD ŚĀSTRI.

Anyone who carefully reads the Nyāya Sūtras will perceive that they are not the work of one man, of one age, of the professors of one science, or even of the professors of one system of religion. It would seem apparent that at different ages philosophers, logicians and divines have interpolated various sections into an already-existing work on what we may, for the want of a better term, call Logic.

It is evident that such a book would be full of contradictions, inconsistencies and irreconcilable passages. So the Nyāya Sūtras are. The Hindu Commentators from Vâtsāyana, in the third century A.D. to Rādhāmohan Gosvāmi in the nineteenth, have attempted to evolve a harmonious system of Logic and Philosophy from the Sūtras. The task is an impossible one, and so every one of them has failed, and that miserably. They have imported later and more modern ideas into the commentaries, but without success. The acute logicians of Bengal thought it was a difficult work; and they had recourse to various shifts to explain the Bhāṣya and other commentaries. They have changed some passages and imported extraordinary meanings into others.

But unfortunately the idea of studying the Sūtras by themselves did not occur to any one of them. Ninety-nine per cent. of the manuscripts of this work are accompanied with some commentary or other. Manuscripts giving the Sūtras only are extremely rare. I got one from Midnapore, and gave a copy of it to my friend Dr. Venis, and it was published at Benares. It is known as the Nyāyasūtroddhāra. My friend Paṇḍit Vindhyeśvarīprasāda Duve got one at Benares, and he published it in the Bibliotheca Indica as an appendix to his edition of the Nyāyavārtika. This is known as Nyāyasūcinibandha. But from what I know of the habits of paṇḍits, I am sure nobody has studied the Sūtras by themselves. They have been used only as works of reference.

I took up the Nyāyasūcinibandha for independent study. On comparing the Sūtras as given there with Sūtras in editions accompanied by commentaries, and also with the Nyāyasūtroddhāra, I was struck with the variety of readings which the Nyāya Sūtras presented. A number of Sūtras are regarded as spurious. The readings of a large number of Sūtras are irreconcilably different in different editions. This is not the case with the Vedānta Sūtras, and with the Mīmāṃsā Sūtras, in which various readings are extremely rare, almost non-existent, and interpolated Sūtras there are none. I am not speaking of the Sāṃkhya and Yoga Sūtras, which are comparatively modern. The difficulty which I feel in regard to the Nyāya Sūtras was also felt about a thousand years ago, when Vācaspatimiśra, who flourished about the end of the tenth century, twice attempted to fix the number of Sūtras and their readings, namely, in Nyāyasūtroddhāra, and in Nyāyasūcinibandha, both of which go by his name. If both are the works of one man, as they profess to be, it is apparent that the author did not feel sure of his ground.

For convenience sake, I took up the Nyāyasūcinibandha dated 898 Saka, *i.e.*, 976 A.D., and that for three reasons,—(1) because it counts the number of Sūtras, number of words, and even the number of letters in the Nyāya Sūtras; (2) because it divides the Sūtras into sections, each dealing with a single topic; (3) and because it is dated, and there are internal evidences to show that it was written by the great Vācaspati, the commentator on the six systems. I have made an English translation of the Sūtras with as little help from the commentaries as possible.

The study of the Sūtras makes it apparent that works of two different sciences have been mixed up. One is a work on Logic, or rather the science of Reasoning, or, as Sadajiro Sugiura terms it, "science of discriminating true knowledge from the false"; and the other is a work on some system of philosophy. The work on Logic is confined almost exclusively to the first and the fifth chapters. I say almost, because some sections of the second chapter also may belong to the Logic part. The rest of the work with about eight Sūtras in the first chapter belong to the philosophical part.

Let us analyse the Logic section. This section seems to contain three separate treatises. The first chapter, with the exception of the Sūtras mentioned above, constitutes the first and the most important treatise. It is complete in itself. The first Sūtra enumerates the sixteen topics essential in Debate, and all the sixteen topics are fully treated of in the first chapter. It is fully self-contained, and nothing farther is needed to complete it. The first Sūtra gives, so to say, the objects and reasons for the science. It says that anyone who has a complete knowledge of the sixteeen topics attains the highest proficiency in every walk of life, and the first chapter deals with the complete knowledge of all the sixteen topics.

I may remark in passing that the science embodied in the first chapter of these Sūtras is not Logic, in the present signification of the term, but Logic in its primitive and rudimentary stage. It may better be called the Science of Debate. And all the requisites of a well-regulated Debate are included in the sixteen topics. They are not always the requisites of the science of Logic, as known at present. The second treatise on Logic, embodied in the Sūtras, is the first "daily lecture" of the fifth chapter. The last Sūtra of the first chapter simply says that Jātis and Points of Defeat are many, thus leaving no room for any elaborate subdivision of these two topics. But the first lecture of the fifth chapter not only enumerates twenty-four subdivisions of the Jātis, but gives careful definitions of every one of them. The author who wrote the first chapter is not the author of the first Lecture of the fifth chapter. The last section of the first lecture of the fifth chapter, which has nothing to do with definitions of the subdivisions of Jātis, but which limits the extent of a fruitless Debate, is no part of the second treatise, and seems to be an addition. The third treatise consists of the second "daily lecture" of chapter fifth. It enumerates the various Points of Defeat and defines them.

One of the most cogent reasons for considering these treatises as separate, and also for considering them to be composed by different authors, is the fact that the same technical terms have been used and defined in all the three, but in very different senses. The Definition of Jāti, as given in the first, does not cover all the subdivisions enumerated in the second. The terms *prakaraṇasama* and *sādhyasama* are defined among the "Semblances of Reason" in the first treatise, but these two have been differently defined as subdivisions of Jātis. The term *matānujñā* has been defined one way in the second and another way in the third. If all the three had been written by one and the same person, the same technical terms would not receive at his hands two such wide definitions.

It is difficult to say whether the composition of the second and third treatises preceded or followed that of the first treatise, which is a comprehensive work on the Science of Debate. Many scholars hold that such comprehensive treatises generally follow separate and partial treatises on parts, just as the uṇādi-sūtras and the gaṇa-sūtras preceded Paṇini, and that these separate treatises after the composition of the comprehensive treatise, formed its appendices.

One would be tempted to believe that all the sections of the first lecture of chapter second, with the exception of the last, and the first and last sections of the second Daily Lecture of that chapter, may be included in the Logical part, because they have a direct bearing on pramāṇa or the instruments of true knowledge, which forms the first essential topic in the Science of Debate.

The commentators and modern paṇḍits, in order to make this incoherent collection of Sūtras a harmonious whole, are obliged to say that the Nyāyasūtras consist of the enumeration, the definition and the examination of the sixteen topics. The enumeration is complete in the first Sūtra, the definition in the first chapter, and the examination in the other chapters. There would have been no cause of complaint if all this were a fact. The examination is, however not complete. It does not comprehend all the sixteen topics. The topics examined in fact are the 1st, 2nd, 3rd, 15th, and 16th. The examination of others have been altogether omitted. If there is any, it is of a very nebulous character. So a complete examination of the sixteen topics is not to be found in the Sūtras, and this is exceedingly suspicious. The examinations are, as a rule, examinations of the definitions given in Chapter I., at least so the commentators say. If so, the examination of Jāti and of the Points of Defeat are not really the examination intended by the commentators. On the other hand, in the case of Jāti, we find that the definition as given in Chapter I., depending simply upon homogeneity and heterogeneity, does not apply to a number of the subdivisions of Jātis as given in Chapter V. The examination of other three topics, too, contains so much of heterogeneous matter, besides an examination of the definition, that one is tempted to say that the whole of the examination affair, *i.e.*, all the chapters II. to IV. are an addition. So far about the Logic portion.

The Philosophy portion has its beginning in the second Sūtra of the first chapter. The first Sūtra of Chapter I., as has been already said, gives the objects and reasons of the work. And these objects and reasons seem to be all secular. There was no need for a second enunciation of the objects and reasons. But the second Sūtra again enunciates them. And in this case, they are philosopical and spiritual. Vācaspatimiśra puts the two together in one section, and calls the section "objects and reasons." The commentators have tried to reconcile this double enunciation of objects and reasons, but without success. The only reasonable explanation of this double enunciation seems to be that some later writer has interpolated the second Sūtra with a view to add philosophical sections to the work. The second Sūtra contains topics which are not enumerated in the first, and the thoughtful reader is struck with the introduction of new matter so early as in the second Sūtra. These topics are misery, birth, activity and fault together with "apavarga." The introduction of these new topics is defended by saying that they fall under the subdivisions of the second topic, in the first Sūtra, namely, "objects of true knowledge." "The object of true knowledge" is a topic which is so vast that all the topics of the world may come under its subdivisions. And, as a result of this, the interpolator has tampered with the definition of prameya (Sūtra I. 1·9) which is virtually an enumeration of its subdivisions, and put in five new topics into it. That the prameyasūtra at one time was different from what it is now, is apparent from the statement of Haribhadrasūri, a Jain writer, who in his ṣaḍdarśana samuccaya describes the prameyasūtra in the following terms :—

प्रमेयं त्वात्मदेहाद्यं बुद्धीन्द्रियसुखानि च, (Bibliotheca Indica edition), or, as in the Benares edition, **प्रमेयं त्वात्मदेहार्थं बुद्धीन्द्रियसुखानि च.** The order of words is different; sukha or happiness seems to have been included in the old prameyasūtra Sukha finds no place in that Sūtra now and in Chapter IV., Âhnika I., the Section 13 on the examination of duḥkha, reduces sukha into duḥkha, and is not prepared to admit sukha as a separate subdivision of prameya. But from Haribhadra's statement we find that sukha was there at some early time. Now the question is, who changed the Sūtras and why? The answer is not far to seek. In a work on Logic prameya, as a topic, must come in. But Logic does not require a long enumeration of prameyas and an elaborate examination of their details, which are essential in philosophy. So the author who wanted to convert a logical treatise into a system of philosophy, and who is responsible for the interpolation of the second Sūtra is also responsible for this alteration in the prameyasūtra The logical treatise was an ancient Hindu treatise, and Hindus never took an ultra-pessimistic view of the world. Sukha is the ultimate goal of the Mīmāṃsakas, of the

Vedāntins, the two really orthodox systems of Hindu philosophy. Why should Nyāya be so pessimistic? There is no reason for it, and it has been shown that the word sukha did at one time occur in the prameyasūtra. The Buddhists are downright pessimists. To them everything is duḥkha, and it is they who believed that sukha was, if properly analysed, duḥkha. It seems that the Hindu logical treatise underwent the first stage of its philosophical transformation in the hands of some Buddhist philosopher, and became a gloomy and pessimistic science. The second Sūtra of the first chapter, destroying so many things successively and reaching to apavarga, has the appearance of Buddhistic teaching. They enumerate a long series of effects from false knowledge, and teach us that as we destroy effects, we perceive the causes, that these causes are also effects; we destroy them and gradually we come to the original cause of all these, namely, false knowledge; when that is destroyed we come to nirvāṇa. This is precisely the teaching of the second Sūtra, though the enumeration is not so long. The Buddhist tradition, as we know it from China and Japan, distinctly says that the Logic of Akṣapāda was their handbook in logic, and that they added to and subtracted from it. The tradition is positive that Mirok mixed up Nyāya and Yoga, and we find in the present Nyāyasūtra a long section on Yoga in IV. 2, and one is puzzled to know why it has been introduced. The grounds advanced by Hindu commentators for its introduction are of the flimsiest kind. But the fact comes from China that Mirok mixed the two up. So some other Buddhist philosophers might have introduced the second Sūtra and changed the prameyasūtra so as to suit his purpose.

That the science of Akṣapāda was, for a long time, in the hands of the Buddhists, and, therefore, not in great favour with the Brāhmanist, will appear from the following considerations. The Rāmāyaṇa, the Mahābhārata, the Purāṇas, and even the Dharmaāstras dislike those who studied the Tarkaśāstra. The Vedantasūtras distinctly say that this science was not accepted by the orthodox. They are known as little removed from the Buddhists—the Buddhists are nihilists, they are half nihilists (ardhavaināśika). That there was an unholy alliance between the Nyāya and the Buddhists in the early centuries of Buddhism, is not open to grave doubts. The introduction of the second Sūtra, the alterations in the prameyasūtra, and the definitions of misery, birth or rebirth, activity, faults, and emancipation in the first chapter appear to be the work of Buddhists. The examination of these definitions occupy the whole of the first Lecture of the fourth chapter.

The work underwent another transformation in the hands of a later Hindu sect who vigorously assailed some of the prominent Buddhist doctrines, both Mahāyānist and Hīnayānist. These assailed Sarvadśūnyatāvāda on the one hand, and Sarvāstvāda on the other. To know who they were not, one has simply to cast his eyes on the various theories that have been assailed in connexion with the examination of rebirth. These are

शून्यतोपादान, ईश्वरोपादान, आकस्मिकत्व, सर्व्वानित्यत्व, सर्व्वनित्यत्व, सर्व्वपृथक्त्व, सर्वशून्यता, संख्यैकान्तवाद। But this gives us no clue to the identification of the sect, save and except that they were non-Buddhists. Haribhadra, however, tells us that these were S̄aivas and Haribhadra belongs to the fifth century of the Christian era.

Haribhadra's statement is borne out by two facts. Sūtra 8, Chapter I., seems to be out of place. The pramāṇas are defined in the four previous Sūtras, and, all of a sudden, comes a Sūtra subdividing s̄abda; subdivisions of s̄abda are unknown in other systems of philosophy. It is generally translated by the word, "dogma." The distinctions between the Revealed Word and the Ordinary Word is peculiar to the Nyāyasūtras. It is not Buddhistic, because they did not know of this subdivision. And in the fifth century, they discarded dogma altogether. Moreover, the introduction of this Sūtra explains the introduction of the section, on the authority of the Vedas, and along with it, of a quarrel with the Mīmāṃsakas on the eternity of sound.

All this seems to be the work of a Hindu sect which we take to be the S̄aivas at the instance of Haribhadra. These are a compromise between the Hindus and the Buddhists.

So the present Nyāyasūtras consist of three treatises on Logic. And the bit of Hindu systems of philosophy that it contained has been mixed up with two other systems of philosophy, which have been laterly interpolated into the book.

Even after a careful examination, I do not find the Nine Reasons and Fourteen Fallacies attributed to Akṣapāda by the Chinese authorities. There are chapters on fallacies and 'homogeneity, and heterogeneity' play an important part in the Nyāyasūtras. But yet no "Nine Reasons" and "Fourteen Fallacies." Perhaps the primitive work of Akṣapada was systematised in very early times by another person named Gotama. But this is diving too deep into the antiquity of Hindu thought, and our appliances are not sufficient for the purpose.

35. *Optimism in Ancient Nyāya.—By* VANAMĀLI VEDĀNTATĪRTHA.

In the interesting paper "A study of the Nyāya-Sūtras," which Mahāmahopādhyāya Haraprasāda Śāstrī read in the Asiatic Society's Meeting in November 1905, I was delighted to find him advocating, with very cogent arguments, that *the original Nyāya-Sūtras were not pessimistic.* Nowadays Nyāya Philosophy means Nyāyavaiśeṣika, and the philosophic productions of the modern Naiyāyikas are really Vaiśeṣika Philosophy in a Naiyāyika garb. The terminology and the method are Naiyāyika, but the philosophy is, nevertheless, Vaiśeṣika. Thus the pessimism of the modern Naiyāyika is due not to his Nyāya, but to his Vaiśeṣika, from which he does not know how to distinguish his Nyāya. The well-known couplet

वरं वृन्दावने रम्ये शृगालत्वं व्रजाम्यहम् ।
न तु वैशेषिकीं मुक्तिं प्रार्थयामि कदाचन ॥

makes the Vaiśeṣika salvation consist in an unconscious, pleasureless, painless existence. This is as it should be. But when Śrīhaṣa makes Gotama (otherwise called Akṣapāda) responsible for a pessimistic doctrine of salvation, he seems to have uncritically stated the common opinion of his time. Says he—

मुक्तये यः शिलात्वाय शास्त्रमूचे सचेतसाम् ।
गोतमं तमवेच्यै (त्यै) व यथा वित्थ तथैव सः ॥

(Naiṣadha XVII., 75.)

The following extracts from the Saṃkṣepa-Śaṅkarajaya of Mādhavācārya will substantiate the Śastri's view. It shows that even the comparatively recent Mādhava was not unacquainted with the fact that the Naiyāyika salvation was really optimistic and included an element of pleasure, though it was vulgarly identified with the Vaiśeṣika salvation. Whether the author was or was not the celebrated Mādhavācārya, the minister of the Bukka family of Vijaynagar, is immaterial to the argument. For what is contended here is that even in such a late production as the Sakṣepa Śaṅkara-jaya, which professedly is an abstract of a larger life of Śaṅkara, the Naiyāyikas are credited with an optimistic view of salvation.

तत्रापि नैयायिक आत्तगर्वः कणादपक्षाच्चरणाक्षपक्षे ।
मुक्तेर्विशेषं वद सर्व्वविच्चेन् नोचेत् प्रतिज्ञां त्यज सर्व्वविक्त्वे ॥
ऽत्यन्तनाशे गुणसङ्गतेर्या स्थितिर्नभोवत्कणभक्षपक्षे ।
मुक्तिस्त्वदीये चरणाक्षपक्षे सानन्दसंवित्सहिता विमुक्तिः ॥

(Saṃkṣepa S̄aṅkarajaya XVI., 68–69).

Says the Naiyāyika vauntingly (to S̄aṅkara): "If you are omniscient, state the difference between the theories of salvation as held by Kaṇāda and by Akṣapāda. Otherwise give up your pretensions to omniscience." (Replies S̄aṅkara) "According to Kaṇāda, salvation is existence, where all connexion with attributes has been absolutely destroyed, and the soul remains like the sky. According to your Akṣapāda that salvation includes a consciousness of pleasure."

S̄aṅkara, the great Advaita commentator on the Brahmasūtras, went to S̄āradā-pīṭha in Kās̄mīra, and before he could enter into the shrine, he was questioned by different philosophers on nice points of Indian Philosophy. Permission to enter was conditional upon answering these questions rightly. The two couplets quoted above occur just after S̄aṅkara had successfully answered the atomic philosopher (Kaṇāda).

From what has been said, it will be evident that though *sukha* or pleasure is not enumerated as a separate prameya in Nyāyasūtra (I. 1. 9), as known at present, and though section 13 of the first āhnika of the fourth chapter reduces it to mere pain, yet it (pleasure) had a place in the old Nyāya S̄āṣtra, and that *the true tradition* was not lost in such out-of-the-way places as the S̄āradā pīṭha in Kās̄mīra, and that only such great masters as S̄aṅkara were expected to know it, the tradition having been lost in the mainland of India much earlier.

……

36. *Some Notes on the Dates of Subandhu and Diṅ-nāga.—By* HARAPRASĀD S'ĀSTRI.

Since the publication of an edition of the Vāsavadattā by Edward Hall, in the Bibliotheca Indica, in 1859, the date of its author is taken to be either the end of the sixth century or the beginning of the seventh. The reason assigned by Hall for arriving at this conclusion is the fact that Bāṇa in the beginning of the seventh century mentions Subandhu as one of his predecessors.

However unsatisfactory the reason might be, the Orientalists have accepted the above date for Subandhu. The question, however, is still an open one; and here are facts which may be taken for what they are worth.

In discoursing on the excellencies of style, Vāmana, who belongs to the ninth century A.D., in his Kāvyālaṅkāra Sūtra Vṛtti, quotes a verse as an example of the excellency named Significance (sābhiprāyatva).

The verse or rather hemistich runs thus:—

"सोऽयं सम्प्रति चन्द्रगुप्ततनयः चन्द्रप्रकाशो युवा ।
जातो भूपतिराश्रयः कृतधियां दिष्ट्या कृतार्थश्रमः ।"

" The celebrated son of Candragupta, the young rājā Candraprakša, has become the refuge of learned men, and fortunately his labours are successful."

Commenting on this the author says, that the words, "the refuge of learned men," are significant, because they bring to mind the fact that Subandhu was one of his ministers.

Now, there were two Candraguptas in the Gupta line; both were called Vikramāditya. The first was the founder of the empire and the second his grandson. The second Candragupta was a patron of learned men. Is it not likely that Subandhu served under one of his sons, Candraprakāša?

It is an old custom among Indian sovereigns to appoint their adult sons to rule extensive territories, and these Princes used to hold courts on the model of their imperial fathers This Candraprakāša seems to have done with Subandhu as one of his ministers.

As Candragupta's inscriptions range from 400 to 414 A.D., Subandhu must have flourished about that time, *i.e.*, in the beginning of the fifth century.

There may be an objection to this, that in some MSS. the word is not Subandhu but Vastubandhu. But there is no such name as Vastubandhu in the history of Sanskrit literature, so far as it is known. Vastubandhu may be a corruption of Vasubandhu who flourished about this time; but he was a Buddhist monk who would not accept office and would not be spoken of with favour by a Hindu writer. Vastubandhu is only. I believe, a scribe's mistake for Subandhu.

There is a passage in Subandhu's own work Vāsavadattā which seems to confirm my conclusion. In the preface to his Vāsavadattā, he regrets that on the death of Vikramāditya, new people came to the front, the old taste for poetry was gone, and everyone's hand was at his neighbour's throat. It seems that on the death of Candragupta there was a civil war, and Subandhu came to grief, by supporting a losing cause. The successor of Candragupta Vikramāditya was Kumāragupta and not Candraprakāśa.

Kern in his "Indian Buddhism" puts down Diṅnāga between 520 and 600 A.D. The Chinese think that he flourished in the tenth century of the Buddhist era, *i.e.*, between 420 and 520 A.D. Tākākusu, in his paper on the date of Vasubandhu, has shown from the dotted Buddhist records left by Indian paṇdits in Chinese monasteries, that the date of Buddha's death is very nearly the same as has been arrived at by the Orientalists of Europe, *viz.*, 480. B.C.

I have got a quotation from Diṅnāga's work in Haribhadra's famous work entitled "Ṣaḍdarśana Samuccaya." He says that the definition of Pratyakṣa or perception is कल्पनापोढ़मभ्रान्त—and he also says that the Buddhists believe only in two sources of right knowledge. It is well known that Diṅnāga discarded Śabda, or dogma, from the sources of right knowledge, and fixed the number of these sources at two; and Diṅnāga's definition of Pratyakṣa is known to be कल्पनाऽपोढ़मभ्रान्तं. So the quotation is from Diṅnāga.

Haribhadra was one of the great Jaina writers whose date of death is fixed by the universal tradition amongst the Jainas, at 535 Vikrama samvat, *i.e.*, 479 A.D. The dates are given in two Prākṛta gāthās, in pp. 372 and 378, vol. iv. Peterson's Reports.

A study of Haribhadra's work confirms the idea that he belonged to about the fifth century A.D. He does not know Vedānta as a system of Philosophy. He enumerates the following as the six systems:—

Bauddha, Naiyāyika, Sāṁkhya, Jaina, Vaiśeṣika and Mimāṃsaka. But, says he, if one considers Naiyāyika and Vaiśeṣika to be one and the same system, to him the sixth would be the Cārvāka. All these stamp him as flourshing before the rise of Vedānta and Yoga. His Mimāṃsā does not show any sign that he knew Kumārila.

If Haribhadra, before 479 A.D., quotes from Diṅnāga and adopts his view as universally accepted by Buddhists, Diṅnāga must have flourished some time before him.

Sadajira Sugiura, who writes a monograph on Hindu Logic as preserved in China and Japan, says that the name of Diṅnāga's teacher is not known. But Kern says he was a pupil either of Asaṅga or of Vasubandhu—two brothers who distinguished themselves as Mahāyānist writers. Tākākusu places Vasubandhu in the reign of Skandagupta, and his son Bālāditya in the seventies and eighties of the fifth century A.D. This, I think, is untenable. Tākākusu makes two initial mistakes: (1) Skandagupta is not Vikramāditya but Kramāditya; and (2) he was not succeeded by Bālāditya but by Pura Gupta.

If we take the Vikramāditya mentioned by Tākākusu to be Candragupta, who is really called Vikramāditya in his coins, and Bālāditya for his heir-apparent Kumaragupta, then the account by Tākākusu and that by Haribhadra can be reconciled. Bālādītya is not a proper name: it simply means "the young Sun," the heir-apparent. If this view of the thing is accepted, Diṅnāga, the pupil either of Vasubandhu or of Asaṅga, would write his books in the first quarter of the fifth century; and by the time Haribhadra wrote, they would be well-known works.

Candragupta Vikramāditya seems to have had two sons—Candraprakāśa and Bālāditya; of these Bālāditya favoured the Buddhists and succeeded to the throne, while Candraprakāśa was worsted in civil war and his minister Subandhu complained that "new men" came to the front, the old taste for poetry was gone, and everyone's hand was at his neighbour's throat.

37. *Formation of New Castes.*—*By* R. Burn, I.C.S.

An interesting example of the constant movement going on among Hindu castes has recently been brought to my notice. Among the numerous endogamous groups included in the term Vaiśya or Baniā are two known as Bārahsenī and Chausenī, the members of which are chiefly found in the Central Doāb. The former claim descent from the Chandravanśi King Brasṇī, while one account of the latter traces their origin to Chānūr, a wrestler attached to the Court of Rājā Kans who was slain by Kriṣṇa. There seems little doubt that neither group is in reality of any considerable antiquity. While the Bārahsenīs are shopkeepers and frequently confectioners, they were, till recently, only allowed to sell articles made up of milk and curds, such as *pera*, *barfī*, etc., and not sweetmeats containing flour or grain such as *puri* and *halwā*. The Chausenīs are usually regarded as a class composed of illegitimate children of Bārahsenīs or outcastes from that group.

Two events have, however, recently happened which show that the Chausenīs are rising in importance and now object to receive recruits in the usual manner. The Hindu Bārahsenīs have already reached the stage at which widow remarriage is no longer recognized. Some members have, however, joined the Āryā Samāj, and a marriage was lately celebrated between a Bārahsenī man and a widow of the same group. When the project was announced, the orthodox Hindus held a meeting and endeavoured to stop further proceedings, but without success. Two days after the marriage another meeting was held, and the married couple and those who aided them were solemnly excommunicated. A printed notice has been widely circulated directing all Bārahsenīs to avoid dining, marrying, drinking or holding any communication with those outcasted. A large feast was subsequently held, at which about 4,000 orthodox Bārahsenīs were present, but to which none of the guilty members were invited. The feeling has gone so far that some men whose sons had previously married into families now outcasted have recalled their daughters-in-law, and refuse to let them visit their parents. Others have turned their own daughters out of their houses as they are married to outcastes.

The other case differs in nature. A Bārahsenī, *A*, has a daughter who was married to *B*. *B* abandoned his wife and kept a Musalmān woman by whom he had several children, and it was thought that he had become a Musulmān. He recently came to *A* and claimed his wife, and was entertained by his father-in-law. *A* has, therefore, been outcasted, and was not invited to the caste feast which celebrated the expulsion of those concerned with the remarriage of a widow.

The question now arises, what is to become of the persons outcasted? Up to a recent date they would have been received by the Chausenīs. This group, however, refuses to admit them, as an important section of it has refused to recognize widow marriage, and even the rest of the group look on the practice with growing disfavour. The outcastes in the first case themselves refuse to be considered as Chausenīs on the ground that the widow remarriage took place between persons of the same caste, while degradation is only effected where a connection takes place between members of different castes. The Chausenīs refuse to accept *A* and *B*, because they hold that the contact with Musalmāns has rendered them unfit for any relations. So far, no final decision has been arrived at, and the result is that the excommunicated persons are regarded as having no caste at all. It is not improbable that the persons turned out for their connection with the widow remarriage will form a separate group.

38. *Ascaris halicoris* Baird.—By Dr. V. Linstow. *Communicated by* N. Annandale.[1] (With 1 plate).

Aus der Pars pylorica des Magens von *Halicore dugong* Quoy & Gaim. Golf von Manaar.

Owen, *Catalogue of the Physiological Series of Comparative Anatomy*, London, 1833.

Owen, *Proc. Zool. Soc*, London, VI., 1838, p. 30.

Baird, *Proc. Zool. Soc.*, London, XXVII., 1859, pp. 148–149, tab. lvi, figs. 2–2c.

Parona, *Annal. Mus. Civic. Genova*, 2 ser., VII., Genova, 1889, pp. 751–761, fig. 1–3, tab. xiii, figs. 1–16.

Stiles u. Hassall, *Intern. Paras. of the Fur Seal*, Washington, 1899, pp. 147–151, figs. 70–75.

Aus dem Magen von *Halicore dugong*; Penang, Rothes Meer, Assab.

Die Art hiess früher *Ascaris halicoris* Owen, aber Owen's Bezeichnung vom Jahre 1833 ist ein blosser Catalog-Name ohne jede Beschreibung; auch im Jahre 1838 sagt er nur: "*in each case the gland* (des Magens von *Halicore dugong*) *was infested by Ascarides, hereafter to be described*"; er hat aber eine solche Beschreibung nicht gegeben.

Die erste Beschreibung, auch unter dem Namen *Ascaris halicoris*, stammt von Baird, der die Länge des Männchens auf 63·5 mm, die des Weibchens auf 82·5 mm. angiebt, und die Vulva des Weibchens in $\frac{2}{3}$ der Körperlänge vom Kopfende findet.

Eine eingehendere Beschreibung lieferte erst Parona; er giebt an, dass das Männchen 85–115 mm. lang ist, am Schwanzende stehen jederseits 4 prae- und 1 post-anale Papille und die Spicula sind kurz; das Weibchen hat eine Länge von 85–144 mm. und eine Breite von 3·5 mm; die Vulva liegt an der Grenze vom 1. und 2 Drittel des Körpers; die Vagina ist 6·5 mm., die Uteri sind 29 mm. lang; eine blinddarmartige Verlängerung des Darms verläuft nach vorn neben dem Ösophagus und hat $\frac{11}{17}$ der Länge desselben; Parona giebt Durchschnitte der Körperwandung mit der Muskulatur, dem Dorsalfeld und dem Lateralfeld, letzteres mit dem in ihm verlaufenden Excretionsgefäss, Durchschnitte der 3 Lippen, des Ösophagus, des Darms, des Blinddarms, des Ovarium, des Uterus und des Hodens.

Stiles und Hassall haben die Art nicht untersucht; sie referiren über die Beschreibungen Baird's und Parona's, und reproduciren einen Theil der Abbildungen derselben.

Parona's Schilderung kann ich mehrfach ergänzen und die Exemplare, welche meinen Untersuchungen zu Grunde lagen verdanke ich der Güte des Dr. N. Annandale, Deputy Superintendent of the Indian Museum in Calcutta.

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[1] [Dr. von Linstow has been kind enough to send me the accompanying note on the Round Worm of the Dugong. It appears that no communication has previously been published in German by the Asiatic Society of Bengal; but it has been felt that the work of so distinguished an authority should be issued exactly as it was received. No student of the Nematodes can be ignorant of the contents of Dr. von Linstow's numerous and invaluable contributions to the literature of the group.—N. A.]

Die Farbe der Nematoden soll im Leben eine grünliche sein. Beide Körperenden sind verdünnt, und Kopf und Schwanzende sind abgerundet.

Die Cuticula ist in Abständen von 0·016 mm. regelmässig quergeringelt; eine gröbere, tiefere Querringelung findet sich in Entfernungen von 0·28–0·35 mm., und in den beiden Seitenlinien stehen in Intervallen von 0·79 mm. vertiefte schwarz-pigmentirte Querfurchen.

Die Leitenfelder haben eine Breite von $\frac{1}{8}$–$\frac{1}{9}$ des Durchmessers und schimmern als weisse Stränge durch die Cuticula hindurch.

Die drei Lippen sind ohne Zwischenlippen, Zahnleisten und Löffelbildung; die Dorsallippe ist 0·45 mm. lang und 0·48 mm. breit; die grösste Breite liegt etwas vor der Mitte; die Form ist gleichmässig abgerundet, die Pulpa bildet 2 rundliche Vorsprünge nach vorn, die jeder einen kleinen fingerförmigen Ausläufer nach innen, nicht weit vom Vorderrande, haben; die Papillen stehen im vorderen Drittel und sind weit nach aussen gerückt.

Der Ösophagus nimmt $\frac{1}{7}-\frac{1}{8}$ der Gesammtlänge ein und ist 0·59 mm. breit; der 0·51 mm. breite Darm sendet eine blinddarmartige Verlängerung nach vorn, die an der Dorsalseite des Ösophagus verläuft und länger als die Hälfte des letzteren ist.

Das Männchen erreicht eine Länge von **115** mm., und eine Breite von 3·16 mm.; das Schwanzende, welches $\frac{1}{146}$ der Gesammtlänge einnimmt, ist ventral eingebuchtet; an demselben stehen jederseits in grossen Abständen 4 prae- und 3 post- anale Papillen; die vorderste der prae-analen steht 4·9 mm. vom Schwanzende entfernt; das 0·19 mm. breite Vas deferens schwillt 4·7 mm. vor der Cloakenöffnung zu einer spindelförmigen 0·62 mm. breiten Samenblase an; die beiden Sirren sind fast gerade, an der Wurzel knopfförmig verdickt und 1·58 mm. lang bei einer Breite von 0·079 mm. Sie verlaufen in einem Musculus protrusor, der sie mit einer Scheide rings umgiebt, und können von einem Musculus retractor zurückgezogen werden. Das dickwandige Vas deferens ist aussen gebildet von einer Ringmuskellage, an der innen ein sehr breites gekerntes Epithel steht; auch der Ductus ejaculatorius hat im Innern hohe gekernte Epithelzellen.

Das Weibchen wird 140 mm. lang und 3·95 mm. breit; das Schwanzende nimmt $\frac{1}{89}$ der ganze Thierlänge ein; die Vulva theilt die Länge von vorn nach hinten im Verhältniss von **14-29**. liegt also an der Grenze von **1**. und 2. Drittel. Die Vagina ist 4·75 mm. lang und 0·39 mm. breit; sie ist sehr dickwandig und lässt unter der Hüllmembran eine breite gekernte Ringmuskelschicht erkennen; dann folgt eine homogene Lage und nach innen von dieser eine breite Auskleidungsmembran mit Längsleisten. Die Vagina theilt sich in 2 Uteri, die 1·07 mm. breit sind; unter der dicken Hüllmembran liegt eine gekernte Ringmuskelschicht, innen von dieser eine granulirte Lage mit kleinen Kernen und nach innen von der letztern eine Schicht sehr kleiner hyaliner kugelförmiger gekernter Körperchen. Die Uteri verschmälern sich am Ende auf 0·24 mm. und gehen in ein gestreckt eiförmiges Receptaculum seminis von 1·78 mm. Länge und 0·59 mm. Breite über, das an seiner Innenwand rundliche gekernte Epithelzellen trägt; dann folgt eine 4·3 mm. lange und 0·24 mm. breite Tuba, welche ausser der Hüllmembran nur aus einer sehr mächtigen gekernten Ringmuskulatur besteht, und auf die Tuba folgt das 0·39 mm. breite, sehr lange, vielfach gewundene Ovarium.

Die Eier sind kugelrund und 0·13 mm. gross; die Schale ist dick und aussen dicht mit unregelmässigen Eindrücken bedeckt, die bald rundlich, bald viereckig, bald dreieckig und bald linienförmig sind.

Erklärung der Abbildungen.

Fig. 1. Dorsallippe.
Fig. 2. Männliches Schwanzende von der linken Seite.
Fig. 3. Querschnitt durch das Vas deferens.
Fig. 4. Querschnitt durch die Vagina.
Fig. 5. u Uterus-Ende; r Receptaculum seminis; t Tuba; o Theil des Ovarium.
Fig. 6. Querschnitt des Uterus.
Fig. 7. Theil eines Uterus-Querschnitts (stärker vergrössert).
Fig. 8. Querschnitt der Tuba.
Fig. 9. Theil eines Querschnitts des Receptaculum seminis.
Fig. 10. Vagina mit dem Beginn der beiden Uteri.

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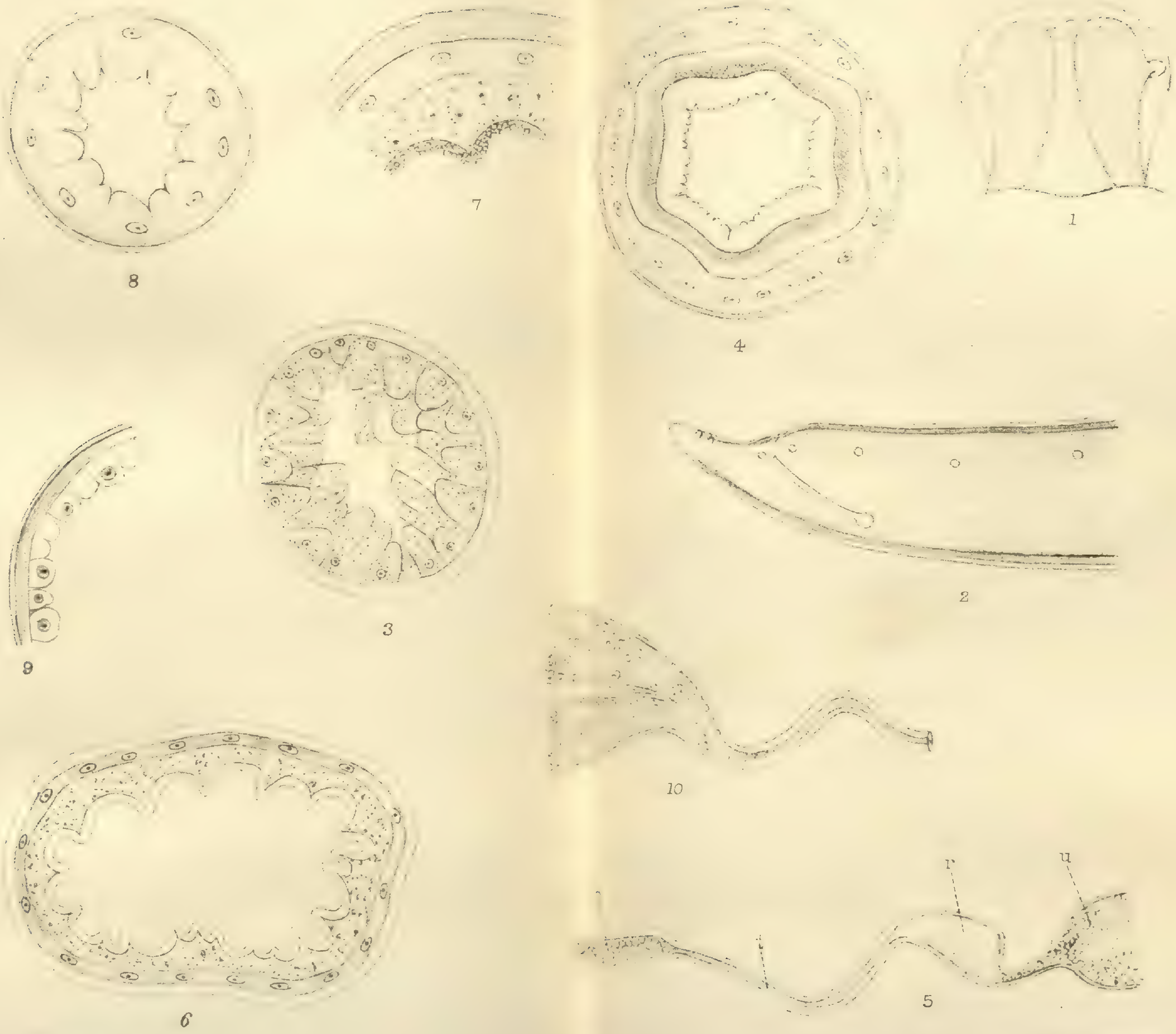
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ANATOMY OF ASCARIS HALICORIS, Baird.

39. NUMISMATIC SUPPLEMENT VI.

N.B.—*The enumeration of these articles is continued from page 135 of the Journal for 1905.*

II.—MEDIÆVAL INDIA.

42. A Hoard of Rajput coins found in the Garhwal District.

The following analysis of a hoard of Rajput coins found at Lansdowne, in the Garhwāl District of the United Provinces, is of some interest, both on account of the contents of the hoard and on account of the place of its discovery.

The circumstances of the find cannot be better described than in the words of the owner, Major M. B. Roberts, 1/39 Garhwal Rifles. In a letter to the British Museum, dated 29th May, 1905, he says:—

"The following is the history of the finding of these coins: ………… My Regiment is permanently stationed at Lansdowne (a cantonment which came into existence on 4th November, 1887) in the Garhwāl District of the United Provinces of Agra and Oudh (late North-Western Provinces). The station is situated on the outer range of the Himalayas between 5,000 or 6,000 feet above sea level, and lies just about half-way between Naini Tāl and Mussoorie. The district is populated for the most part by Rājputs, who were supposed to have immigrated there from Rājputāna at various periods up to about 1,000 years ago, I believe. On the 22nd October last, whilst having a building site for my house excavated on the top of the ridge, a number of these coins, all exactly alike, were discovered buried in a small earthenware pot about two feet below the surface. Unfortunately the earthenware pot was broken into minute fragments by the pickaxe."

The coins were 157 in number; they were of copper, often showing traces of silverplating, and they were all of the well-known Rājput types "the bull and horseman." They are distributed as follows:—

Tomāra Dynasty of Dehli and Qanauj.

	No.
Sallakṣaṇa-Pāla Deva, A.D. 978-1003.[1] (*v.* Cunningham, *Coins of Mediæval India*, page 88, Pl. IX. 1) … … …	5
Anaṅga-Pāla Deva, A.D. 1049-1079. (*ibid.* page 85, Pl. IX. 4 and 5) … …	6

Rāhtor Dynasty of Qanauj.

Madana-Pāla Deva, A.D. 1080-1115. (*ibid.* page 85, Pl. IX. 15) … …	39

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[1] The dates given are those of Cunningham.

Chauhān Dynasty of Ajmir and Dehli.	
Someśvara Deva, A.D. 1162-1166. (*ibid.* page 86, Pl. IX. 9)	21
Rājpūts of Narwar.	
Chāhaḍa Deva, A.D. 1234-1255. (Thomas, *Pathāns*, page 70, referred to but not illustrated in Cunningham, *op. cit.* page 92)	72
Coins not completely identified. (cf. Cunningham, *op. cit.* page 88)	14
TOTAL ...	157

It will be seen that the coins, which are at the same time both the most numerous and the latest in date, are those of Chāhaḍa Deva; and it is, therefore, not unreasonable to suggest that the hoard was most probably concealed during his reign.

An excellent summary of the chief events of the reign of Chāhaḍa Deva is to be found in Thomas, *Pathāns*, page 67ff. His position seems to have been that of "the recognised leader and lord paramount of the Hindu princes of Central India, struggling to preserve their kingdoms from the foreign invader" (*op. cit.* page 68). He is described in an inscription of his descendant Gaṇapati (Vikrama 1355, A.D. 1298) as the founder of a family of Rajput princes reigning at Nalapura (Narwar),[1] and his coins of the Narwar type bear dates varying from $129x$ to 1311 Vikrama (A.D. $1233+x$ to 1254)[2]; but such of his coins as occur in the persent hoard are not of the well-known Narwar type, and they would certainly seem to indicate some extension of his dominion. Ajmir would be a far more probable attribution for these coins, though the varieties of Rājpūt coinage have not yet been studied with sufficient minuteness to enable us in most cases, to determine their different localities with precision.[3] All that can be said with certainty in regard to the locality of these coins is that they do not belong to Narwar, the characteristic types of which are quite different.

As Thomas points out (page 70), the coins bearing the name of Chāhaḍa Deva represent him either (1) as an independent sovereign, or (2) as a tributary to the Muhammadan conqueror, Shams-ud-dīn Altamsh. All the seventy-two coins of his which are included in this hoard belong to the former class; and we may perhaps conclude that the hoard was buried in the earlier part of his reign before the date of his submission to Altamsh.

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[1] *Indian Antiquary*, XXII, p. 81.

[2] Cunningham, *Coins of Mediæval India*, p. 90, Pl. X. 5-7.

[3] *Cunningham* (*op. cit.* p. 91) attributes these coins to Ranthambhor. But if the chronological-table given by Thomas, p. 45, is correct, Ranthambhor was captured by Altamsh in Hejira 623 = A.D. 1226; and Chāhaḍadeva seems not to be heard of before A.D. 1234 (Thomas, p. 67).

Major Roberts has noticed the tradition which is still preserved of immigrations of the population from Rājputāna to Garhwāl. It is extremely probable that the Muhammadan conquests were one of the chief causes of such immigrations; and the hoard, which we have examined, may, therefore, be regarded as an historical record of considerable interest.

It remains only to add that, through the generosity of Major Roberts, specimens of each variety represented in the hoard have been added to the collection of the British Museum.

British Museum : E. J. Rapson.

43. IV.—MUGHAL EMPERORS.

Some rare Mughal Coins.

(i) *Akbar.*

Æ.
Weight, 306 grains.
Size, ·84 inch.
Date, 981 in Persian words.

Obverse.
دارالملک
حضرت دهلي
فلوس

Reverse.
ويک
هشتاد (*San-i-Nuhṣad hashtád wa yak*)
نهصد
سنة

Fulūs of Akbar from the Dehli Mint with the title *Hazrat* are known, but this *Fulūs* bears the full title *Dár-ul-Mulk Hazrat*, which we meet on Humāyun's *Fulūs*.

(ii)

Æ.
Weight, 154 grains.
Size, ·7 inch.
Date, 965 in Persian words.

Obverse.
فيروزة (*Zarb Fulūs*
حصار *Hiṣṣár Firoza*)
ضرب فلوس

تاریخ پنج شصت (*San-i-Tárikh*
Reverse. سنه *Nuhsad Shasht.*)
نهصد (*wa*) *Panj*).

This *Fulūs* (hitherto unpublished) weighs 154 grains, and is therefore *half a Dām or half a Fulūs.*

There is an eight-rayed star just to the right of ف of فلوس

(iii) *Farrukhsiyar.*
Æ.
Weight, 100 grains.
Size, ·75 inch.
Mint, Bahādur garh. ?
No date.

Obverse. فرخ سير
فلوس

Reverse. بهادر گره ؟
ضرب

This is a new mint in copper of this king. As the word Bahádur is found engraven on this *Fulūs*, it is open to question whether it is (1) Bahádurgarh, (2) Bahádurpatan, or (3) Bahádurpúr. I was fortunate in getting this coin as a present from my kind friend Mr. Cowasjee Eduljee Kotwall of this place, along with some rubbings of copper *Fulūs* of the same king. On one of the rubbings I read distinctly the mint (Bah)ādurgarh.

(iv) *Jahándár Shah.*
Æ.
Weight, 166 grains.
Size, ·75 inch.
Mint, Dáru-s-Salṭanat Burhānpūr.
Date, Ahad احد

Obverse. Portions of the usual legends.
در آفاق زد سکه چون مهر و ماه
ابوالفتح غازي جهاندار شاه
in three lines.

Reverse.
جلوس مانوس
میمنت
سنه احد دارالسلطنت
ضرب
برهانپور

Hitherto coins are known to have been issued from the Burhānpūr Mint either without, or with one of its titles—*viz.*, *Baldat* بلدة *Baldat-i-Fākhira* بلدة فاخرة and *Dāru-s-Surūr* دارالسرور. This *mohr* adds a new epithet to this mint.

(v) *Rafiu-d-Darjāt.*
Æ.
Weight, 170 grains.
Size, ·92 inch.
Mint, Zīnat-ul-Bulád Ahmadābād.
Date, **11(31)** A.H.

Obverse. Couplet in three lines thus—

زد سکه بهند با هزاران برکات
شاهنشه بحر وبر رفیع الدرجات

The *Hijri* year is at the right of the top line.
۱۳۱۱.

Reverse.

احمداباد
زينت البلاد
ضرب
جلوس ميمنت مانوس
سنة احد

I have had a rupee similar in design to this gold mohr presented by my kind friend Dr. Geo. P. Taylor, of Ahmadábád. It was Dr. Taylor who pointed out, for the first time, that *Ahmadábád*, like other epithets, was associated also with the *title* Zinat-ul-Bulad (the Beauty of Towns). *Vide* his interesting article on "Coins of Ahmadábád," pages 436-437, Plate V. Volume XX. No. LVI, Journal Bombay B.R.A. Society.

F. J. THĀNAWĀLĀ,
Bombay.

44. A NEW TYPE OF THE COINS OF SHĀH SHUJĀ'.

The coin described below has recently been acquired for the Lucknow Museum from a find in the Bāndā District.

Obverse.	*Reverse.*
لا اله الا الله	(? با) دوغازي
محـــــــمد	محمد شاه احد شجاع
رسول الله	سكندر ذصــــــو الد

Margin doubtful.

Æ. *Weight*, 143. *Size*, ·75 inch.

No coins of S͟hāh S͟hujā are recorded in the catalogues of the Calcutta and Lâhore Museums. The British Museum Catalogue describes two coins (Nos. 690 and 691). The reading of the new coin differs from these in the case of the reverse. There is no trace of a square area, and in this respect the new coin resembles the early issues of S͟hāh Jahān. The horizontal mark below the first line is probably part of the word شاه, and the similar mark above the last line is possibly ین, the completion of the word الد which commences in the last line. I cannot explain the letter read as و which comes between باد and غازي in the first line. The reading of the last line suggests that the lower margin of the reverse on both the coins described in the B.M. catalogue should read سکندر شاه. In Coin No. 690 it is read باد (ا) کبر (ا) which is historically improbable. The right margin of Coin No. 691 is read جلون اباد. A comparison with Coin No. 690 shows that it should be صاحبقران ثاني. The top margin of No. 691 seems to read نصیر الدین......, which presents a difficulty.

R. Burn.

45. On the Identity of the Coins of Gujarāt Fabric and the Sūrat Maḥmūdīs.

In this article I purpose submitting evidence which, in my opinion, goes to prove that the silver coins designated in the British Museum Catalogue coins of "Gujarāt Fabric" are identical with those known to early writers under the name of "Sūrat Maḥmūdīs."

I. From the testimony of European travellers in India in the seventeenth century, it is clear that in the first half of that century silver coins of two distinct types were current in and around the city of Sūrat.

(*a*) Edward Terry, "Chaplain to the Right Hon. Sir Thomas Row, Knt.," landed from the good ship "Charles" at the port of Sūrat on the 25th of September, 1616 (A.H. 1025). In his "Voyage to East India," first published in 1655, he thus writes:—

> "They call their pieces of money roopes, of which "there are some of divers values, the meanest "worth two shillings and three-pence, and the "best two shillings and nine-pence sterling. By "these they account their estates and payments. "They have another coin of inferior value in "Guzarat, called Mamoodies, about twelve-pence "sterling; both the former and these are made in "halves, and and some few in quarters; so that "three-pence is the least piece of silver current in "those countries, and very few of them to be seen.

> "........Their silver coin is made either round or "square, but so thick as that it never breaks, nor "wears out.[1]"

The "meanest" rupees in this passage correspond doubtless to the ordinary rupees issued by Akbar and Jahāngīr, weighing each about 180 grains; but the "best" rupees will be the heavy ones, from 212 to 220 grains each, that were struck in the first few years of Jahāngīr's reign. The ratio of the former to the latter would be 180: 220, or, as Terry has it, 27 : 33. But besides these rupees a coin distinctly inferior was also current in Gujarāt, to wit, the "mamoody," worth about 12*d.*, or a little less than half the ordinary rupee of that time.

(*b*) Sir Thomas Herbert, who, as Secretary to the English Embassy to Persia, journeyed in the East from 1627 to 1629 (A.H. 1037-9), writes in his "Travels" regarding the money of "Indostan."

> "The current money here is pice, which is an heavy "round piece of brass, 30 of which make one "shilling. The Mamoody, which is of good "silver, round and thick, stamped after the manner of the Saracens (who allow no images) with "Arabick letters, only importing the King and "Mahomet, is in value one shilling of our coin; "and the Roopee, which is made also of like pure "silver, is 2*s.* 3*d.*, and a Pardow 4*s.*[2]

(*c*) But it is Albert de Mandelslo, resident in Sūrat in 1638 (A.H. 1048), who gives the most precise information as to the money current in "the Kingdome of Guzuratta." In his "Voyages and Travels" he writes:—

> "They have also two sorts of money, to wit, the "Mamoudies and the Ropias. The Mamoudis are "made at Surat, of silver of a very base alley, and "are worth about twelve-pence sterling, and they "go onely at Surat, Brodra, Broitchia, Cambaya, "and those parts. Over all the Kingdome besides, as at Amadabath and elsewhere, they have "Ropias Chagam, which are very good silver, "and worth halfe a crown French mony. Their "small mony is of copper, and these are the "Peyses we spoke of, and whereof twenty-six "make a Mamoudy, and fifty-four a Ropia........ "Spanish Ryalls and Rixdollars are worth there "five Mamoudis......The Chequines and Ducats of "Venice are more common there (than the Xeraphins), and are worth eight and a half, and

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[1] **Terry : "A Voyage to East India,"** edition of 1777, p. 113.

[2] **Harris : "A Compleat** Collection of Voyages and Travels," Vol. I., p. 411.

> " sometimes nine Ropias, Surat-money, accord-
> " ing to the change and the rate set on the
> " money."[1]

Reckoning the French crown (écu), the Spanish real, and the German rixdollar (reichsthaler) each at 4*s.* 6*d.*, and the Italian sequin and Venetian (gold) ducat each at 9*s.* 4*d.*, we arrive, according to the above passage, at the following values: The "Ropia Chagam" 27*d.*; the Maḥmūdī, or "Ropia, Surat-money," 12*d.*, or 13*d.* or 10·8*d.* or 12·4*d.* It thus appears that, while the "Ropia Chagam," which is evidently the full Imperial rupee, stood fairly constant at 27*d.*, the value of the Sūrat Maḥmūdī fluctuated between a minimum of 10·8*d.* and a maximum of 13*d.* We should also bear in mind that the silver of the Maḥmūdī is here stated to have been inferior to that of the rupee; also that the district in which the Maḥmūdī passed as current coin was limited to the southern part of the province of Gujarāt, say from Sūrat to Cambay.

II. With what coin may we identify this Sūrat Maḥmūdī? Is it the same as the well-known Maḥmūdī of Persia?

That any Persian money should have been current in Gujarāt and restricted there to merely the southern districts is certainly very improbable.

Moreover the value of this Persian Maḥmūdī is given by Tavernier as one-sixteenth of the Venetian sequin, *i.e.*, 7*d.* or one-eighth of the Spanish dollar, *i.e.*, $6\frac{3}{4}$*d.*[2] Also in the Table of Equivalences prefixed to J. P[hillips]'s English Translation of Tavernier's "Six Voyages" (1636-1667) the Persian Maḥmūdī is entered as 8·05*d.* This, then, is plainly a considerably less valuable silver piece than the Sūrat Maḥmūdī ranging from 10·8*d.* to 13*d.*

When treating of the Persian coins, Fryer, whose eight letters were written from India or Persia between the years 1672 and 1681, states—

> " 3 Shahees is 1 Mam. Surat;
> 2 Shahees is 1 Mamood. Persia."[3]

When Fryer thus definitely distinguishes between the Sūrat Maḥmūdī and the Persian, we may safely conclude that the two coins are not identical.

III. Can the Sūrat Maḥmūdī have been a silver coin of one or other of the various types that were current in Cutch and Kāṭhiāwār (Navānagar, Jūnagaḍh, and Porbandar)?

The trade between Gujarāt and Cutch, or Gujarāt and Kāṭhiāwār, was for the most part carried on by land and not by sea, and the influence of this trade would thus be specially felt in the north and north-west portion of the province. It hence appears extremely improbable that any coins from Cutch or Kāṭhiāwār should become the circulating medium in South Gujarāt, yet not find acceptance as currency for Aḥmadabād and the north.

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[1] Mandelslo: "Voyages and Travels": English translation by John Davies, edition of 1662, p. 85.

[2] Ball's edition of "Travels in India by Jean Baptiste Tavernier," Vol I., p. 26, n. 4.

[3] Fryer: "A New Account of East India and Persia": edition of 1698, p 211.

The coins of Cutch and Kāṭhiāwar may indeed have been originally called 'maḥmūdīs,' but this designation soon gave place to the term 'korī,' the name that still attaches to them. Accordingly, if ever current in the Sūrat district, they would, in all probability, have been denominated not the Maḥmūdīs but the Korīs of Sūrat.

Lastly, these Korīs, like the Persian Maḥmūdīs, were all of them considerably inferior in value to the Sūrat Maḥmūdī. The latter, we have seen, was reckoned at about 12*d*., the rupee being 27*d*., but the Cutch Korī is now, and was probably then too, appraised at 7·1*d*., that of Jūnagaḍh at 7·3*d*., of Navānagar at 7·6*d*., and of Porbandar at 8·5*d*. Or, to express these relative values in another way, in exchange for Rs. 100, 225 Sūrat Maḥmūdīs sufficed; but of the Rāṇās͟hāī Korīs of Porbandar 318 were required; of the Jāms͟hāī Korīs of Navānagar, 355; of the Dīwāns͟hāī Korīs of Jūnagaḍh, 369; and of the Korīs of Cutch, 380. In fact it would seem that, while the Surāt Maḥmūdī fluctuated between half a rupee and a third, inclining to the half, the Korī ranged in value between a third of a rupee and a quarter, inclining to the quarter.

For the above reasons the conclusion is inevitable that the Korī, whether of Cutch or of Kāṭhiāwār, cannot be regarded as identical with the Surāt Maḥmūdī.

IV. Were the Sūrat Maḥmūdīs the same as the silver coins of the Gujarāt Salṭanat?

No reason can be given why the Gujarāt Salṭanat coins should have remained current in the south of Gujarāt, yet not in the north. Indeed, bearing in mind that during the declining years of the Salṭanat, say, after the death of Bahādur in 1536, its coins probably all issued from a single mint—that of Aḥmadābād—we may fairly assume that they would survive in circulation longer in the Aḥmadābād, or northern, districts than in the south. It seems incredible that coins struck in Aḥmadābād should be superseded there and yet be accepted as the currency of Sūrat.

It was in A.H. 980 (A.D. 1573) that Akbar conquered Gujarāt and annexed it to his Empire. In that same year he issued coins in his own name from the Aḥmadābād Mint, and we may safely affirm that thereafter he would permit no more coins to be struck in the name of the vanquished Sulṭān Muẓaffar III. Save for the five months of A.H. 991 (A.D. 1583) when Muẓaffar again held the sovereignty of Gujarāt, the minting of coins of the independent Salṭānat must have ceased in the year 1573, thus some sixty-five years before Mandelslo's visit to Sūrat. Now it is surely most improbable that during all these sixty-five years the coinage—never very plentiful—of the conquered province of Gujarāt should have maintained its standing as the recognised currency of the southern districts.

We have already seen that the Sūrat Maḥmūdī was worth just about four-ninths of the Imperial rupee, hence, had both coins been of equally good silver, the Maḥmūdī would have weighed 80 grains over against the 180 grains of the rupee. Its actual weight, however, owing to the presence of a "very base alley," must have been more than 80 grains, say between 85 and 90. Now, no silver coins of the Gujarāt Salṭanat are known of this weight: they are all either much lighter or much heavier. Of fifteen silver coins of Muẓaffar III. now in my possession, the weights are as follow:—

35, 36, 67, 70, 71, 72 (four), 73, 74, 110, 111, 112, and 114 grains. Of these not one could by any possibility be regarded as in value four-fifths of a Mughal rupee.

Thus we are compelled to the conclusion that the Sūrat Maḥmūdī was not identical with any silver coin of the Gujarāt Salṭanat.

V. If, now, this Maḥmūdī current in Sūrat was not the Persian Maḥmūdī, nor the Cutch or Kāṭhīāwār Korī, nor the Maḥmūdī of the Gujarāt Salṭanat, then, by the "method of exhaustion," it must have been the Coin of Gujarāt Fabric—the only remaning type. The identity of these two is confirmed by the following considerations:—

(*a*) All the Gujarāt Fabric coins bear impressed the name of Akbar, the conqueror of the province, and hence the Imperial Government would readily sanction the use of such coins for currency in a portion of the Empire.

(*b*) The dates on these coins, ranging, so far as yet known, from A.H. 989 to 1027 (A.D. 1581-1618), bring them easily within the period to which the statements made regarding the Sūrat Maḥmūdī by Terry and Herbert and Mandelslo have reference.

(*c*) One comes across these coins nowadays in the strip of country between Sūrat and Aḥmadābād, but they are seldom found in Kāṭhīāwār or in North Gujarāt. Thus it is the area in which the Sūrat Maḥmūdīs were originally current that mainly supplies us at the present day with specimens of Gujarāt Fabric coins.

(*d*) And—most important of all—the average weight of these Gujarāt Fabric coins which now come to hand proves to be 85 grains. Hence we may infer the original weight to have been about 90 grains. Considering both their base material and their weight, the money-value of such coins would bear to that of the Akbarī or ordinary Jahāngīrī rupee a ratio of just about 12 : 27—the ratio affirmed by Mandelslo to subsist between the Sūrat Maḥmūdī and the "Ropia Chagam."

If, then, as the conclusion of the whole matter, we may regard the Gujarāt Fabric coins as identical with the Sūrat Maḥmūdis, we may further unhesitatingly accept as true Mandelslo's express statement that these coins were "made at Sūrat." For a currency purely local there was a purely local mintage. The capital city of the province, Aḥmadābād, issued imperial rupees in the very year of the imperial conquest; but soon thereafter the less important city in the south, Sūrat, opened with, we may well believe, imperial sanction, a mint of its own, whence for some forty years issued not indeed "Ropias Chagam" but the Sūrat Maḥmūdī, known to-day as the coins of "Gujarāt Fabric."

Aḥmadabad. GEO. P. TAYLOR.

V.—MISCELLANEOUS.

46. ON SOME "GENEALOGICAL" COINS OF THE GUJARĀT SALṬANAT.

On the occasion of a recent visit to Bombay it was my good fortune to visit the rooms of the Bombay Branch of the Royal Asiatic Society in the company of my kind friend Mr. Framji Jamaspji Thanawala. He had previously written me that in the Society's cabinet he had discovered two coins of the Gujarāt Salṭanat, remarkable since bearing the pedigree of the regnant Sulṭān traced back, in each case, to the founder of the dynasty. Two such, if we may so call them, "genealogical" coins of Gujarāt have already been published, one in Thomas' "Paṭhāṇ Kings," and the other in the Journal of the Bo. Br. R.A.S. No. LVIII. A description of all the four coins now known of this extremely rare type may prove of interest.

1. *Vide* Thomas: "Paṭhāṇ Kings," page 352.

Æ.
Weight, 172 grains.
Date, A.H. 828 (by a misprint entered in Thomas as A.H. 823), A.D. 1424-25.

... ...

Obverse.

احمد شاه بن محمد
شاه بن مظفر شاه
خلد خلافته ۸۲۸

Reverse.

السلطان الاعظم
ناصر الدنيا و الدين
ابو الفتح

2. In cabinet of Bo. Br. R.A.S. This coin was once looped, but the loop has been wrenched off.

Æ.
Weight, 167 grains.
Date, wanting.

Obverse. In square.

احمد شاه بن محمد
شاه بن مظفر
شاه خلدت خلافته

Margins quite illegible.

Reverse.

السلطان الاعظم
ناصر الدنيا و الدين
ابو الفتح

3. In cabinet of Bo. Br. R.A.S. This coin is looped.

Æ.
Weight, 188 grains.
Date, A.H. [8]65, A.D. 1460-61.

Obverse.

محمود شاه ابن محمد
شاه ابن احمد شاه ابن محمد
شاه ابن مظفر شاه
... ... ٦٥

On the last line the first word is probably السلطان

Reverse.

الواثق بالله المنان
ناصر الدنيا و الدين
ابو الفتح

This is the earliest Gujarāt coin yet known bearing the phrase الواثق بالله المنان, the Truster in Allah, the Gracious.

4. *Vide* Jour Bo. Br. R.A.S., No. LVIII., page 334, and **Plate IV.**

Æ.
Weight, 130 grains.
Date, A.H. 933, (A. D. 1526-27).

Obverse.

قطب الدنيا و الدين ابوالفضل
بهادر شاه بن مظفر شاه

Part of this legend is worn, but it is probable that the coin bore at this part the words ابوالفضل

Reverse.

بن محمود شاه بن محمد شاه
بن احمدشاه بن محمدشاه بن مظفرشاه
۹۳۳

Thus the legend, beginning on the obverse, is continued on the reverse.

This most interesting coin was very kindly presented to me four years ago by Mr. H. Nelson Wright, I.C.S.

In connexion with these four "genealogical" coins in silver, reference may be made to a bullion coin of allied type, struck by

---

N.B.—The following Genealogical Table includes all the kings of the Gujarāt Salṭanat whose names occur on any of the five coins :—

2.—Muẓaffar I., H. 810-813.
1.—Muḥammad I., H. 806.
3.—Aḥmad I., H. 813-846.
4.—Muḥammad II., H. 846-855.

5. - Quṭbaldin Aḥmad II., H. 855-863.
6.—Maḥmūd I., H. 863-917.
7.—Muẓaffar II., H. 917-932.
8.—Bahādur, H. 932-943.

Maḥmūd I in A.H. 863 (A.D. 1458-59), in which his relationship to the two preceding Sulṭāns is indicated. The coin is figured on Plate II (Nos. 15*a*, 15*b*) of the Jour. Bo. Br. R.A.S., No. LVIII.

Its legends read as follow :—

Obverse.

ناصر الدنيا و
الدين ابو الفتح
محمود شاه

Reverse.

اخ قطب شاه
بن محمد شاه
السلطان ٨٦٣

Aḥmadābād. Geo. P. Taylor.

PROCEEDINGS

OF THE

ASIATIC SOCIETY OF BENGAL

FOR

JANUARY, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 4th January, 1905, at 9-15 P.M.

The Hon. Mr. Justice F. E. Pargiter, B.A., I.C.S., President, in the chair.

The following members were present :—

Mr. J. Bathgate, Major W. J. Bythell, R.E., Babu Manmohan Chakravarti, Rai Sarat Chandra Das Bahadur, Mr. F. Doxey, Mr. G. C. Dudgeon, Mr. N. L. Hallward, Dr. W. C. Hossack, Mr. H. H. Mann, Dr. M. M. Masoom, The Hon. Mr. Justice Saroda Charan Mitra, Captain L. Rogers, I.M.S., Pandit Yogesa Chandra Sastree, Pandit Satis Chandra Vidyabhusana.

Visitors :—Mr. H. Chandler, Mr. P. M. Choudry, Rev. Ekai Kamaguchi, Mr. B. T. Pell, and Mr. S. C. Sanial.

The minutes of the last Meeting were read and confirmed.

Sixty-nine presentations were announced.

His Honour Sir A. H. L. Fraser, K.C.S.I., Lt.-Col. H. T. S. Ramsden, I.A., Mr. J. T. Rankin, Mr. Sukumar Sen, Babu Mucksoodan Das, and Mr. F. Turner, were ballotted for and elected Ordinary Members.

It was announced that Babu Roormall Goenka and Major A. H. Bingley, I.A., had expressed a wish to withdraw from the Society.

The President announced that he had, in accordance with the resolution passed at the last Council Meeting, that the objects which the Society decided to lend to the Trustees of the Victoria Memorial Hall for exhibition should be lent to them for exhibition during this cold season as soon as H.E. the Viceroy wished for them—handed them over to the Trustees, except the Asoka stone which the Trustees excluded.

The President also announced that he had received six essays in competition for the Elliott Prize for Scientific Research for the year 1904.

Rai Sarat Chandra Das Bahadur described the Lamaic incarnation of Tibet.

The following papers were read:—

1. *On the Mārkaṇḍeya Purāṇa.—By* THE HON. MR. JUSTICE F. E. PARGITER, B.A., I.C.S.

The paper will not be published in the Journal.

2. *The Dalai Lama's Hierarchy.—By* RAI SARAT CHANDRA DAS BAHADUR, C.I.E.

The paper has been published in Journal, Part I, Extra No., 1904.

3. *On the Prevalence of Fevers in the Dinajpur District.—By* LEONARD ROGERS, M.D., I.M.S., *Officiating Professor of Pathology, Medical College, Calcutta.*

The paper has been published in Journal, Part II, Supplement, 1904.

FEBRUARY, 1905.

The Annual Meeting of the Society was held on Wednesday, the 1st February, 1905, at 9-30 P.M.

HIS EXCELLENCY LORD CURZON, G.M.S.I., G.M.I.E., Patron, in the chair.

The following members were present :—

Dr. A. G. Allan, Mr. N. Annandale, Mr. J. Bathgate, Rev. P. O. Bodding, Babu Monmohan Chakravarti, Mr. B. L. Chaudhuri, Mr. W. R. Criper, Mr. J. N. Das-Gupta, Mr. W. K. Dods, Mr. F. Doxey, His Honour Sir A. H. L. Fraser, Mr. N. L. Hallward, Mr. T. H. Holland, Mr. D. Hooper, Dr. W. C. Hossack, Mr. G. W. Küchler, Mr. C. W. McMinn, Mr. J. Macfarlane, Mr. E. D. Maclagan, Kumar Ramessur Maliah, The Hon. Mr. Justice F. E. Pargiter, Mr. W. Parsons, The Hon. Mr. A. Pedler, Kumar Satindradev Rai Mahasai, Dr. P. K. Ray, Mr. H. H. Risley, Captain L. Rogers, I.M.S., Dr. E. D. Ross, Pandit Yogeśa Chandra Sastree, Mahamahopadhyaya Haraprasad Shastri, Mr. H. E. Stapleton, Pandit Satis Chandra Vidyabhushana, Mr. E. Vredenburg, Mr. W. H. Arden Wood, Mr. J. Wyness.

Visitors :—Mr. R. E. V. Arbuthnot, Miss B. Buckland, Mr. H. Chandler, Mr. E. C. Cotes, Mr. A. F. Cousins, Rev. J. Dahlmann, S.J., Lady Fraser, Babu Devabrata Mukhopadhyaya, Kumar Manindradev Rai Mahasai, Mr. S. C. Sanyal, Mr. G. Stapleton, Rev. A. Willifer-Young.

According to the Rules of the Society, the President ordered the voting papers to be distributed for the election of Officers and Members of Council for 1905 and appointed Messrs. G. W. Küchler and N. L. Hallward to be scrutineers.

The President announced that the Trustees of the "Elliott Prize for Scientific Research" had awarded the prize for the year 1904 to Babu Sarasi Lal Sarkar, and read the following report of the Trustees :—

Report on the Elliott Prize for Scientific Research for 1904.

The Trustees have received Essays from the following competitors for the prize :—

1. *On the crystalline properties of a potassium copper ferrocyanide compound. Parts I & II.—By* SARASI LAL SARKAR, M.A.
2. *On the experimental determination of the Electro-chemical equivalent of nickel. (With diagrams.).—By* SURENDRA NATH MAITRA, M.A.

3. *On a complete investigation of a Phenomenon taking place beyond the critical angle.—By* JAGADINDRA ROY.

4. *Essay on metal soaps.—By* AKSHAYA KUMAR MAJUMDAR, M.A.

5. *An Essay on the results of "Original Researches" (made during 1903-04) leading to the discovery of a cheap and simple chemical process for the extraction and cleaning of fibre from plantain and banana stalks easily adoptable for the development of a profitable industry by all classes of people in Bengal or in any place in India.—By* MANINDRANATH BANERJEE.

6. *On the Hindu method of manufacturing spirit from rice and its scientific explanation.—By* JOGES CHANDRA ROY.

The Trustees, after consulting experts as provided in the scheme, adjudge the prize for the year 1904 to Babu Sarasi Lal Sarkar, M.A.

F. E. PARGITER,
President, Asiatic Society of Bengal.

ALEX. PEDLER,
Director of Public Instruction, Bengal,
AND
Vice-Chancellor, Calcutta University.

CALCUTTA,
30th January, 1905.

The President also announced that the Barclay Memorial Medal for the year 1904 had been offered to Lt.-Col. D. D. Cunningham, F.R.S., C.I.E., I.M.S., (retired).

The President then called upon the Secretary to read the Annual Report.

ANNUAL REPORT FOR 1904.

The Council of the Society have the honour to submit the following Report on the state of the Society's affairs during the year ending 31st December, 1904.

Member List.

During the year under review, 39 Ordinary Members were elected, 8 withdrew, 5 died, and 18 were removed from the list, *viz.:* 6 under Rule 38, as defaulters; 9 under Rule 40, being more than 3 years absent from India; and 3 under Rule 9, not having paid their entrance fees. The election of one member was cancelled at his own request as he was not prepared to join the Society at once. Of the members elected, 2 were old members who rejoined. The total number of members, at the close of 1904, was thus 343 against 335 in the preceding year. This is higher than that of any year on record. Of these 132 were Resident, 130 Non-Resident, 14 Foreign, 21 Life, and 45 absent from India; and one a Special Non-Subscribing Member, as will be seen from the following table, which also shows the fluctuations in the number of Ordinary Members during the past six years :—

YEAR.	PAYING.				NON-PAYING.				GRAND TOTAL.
	Resident.	Non-Resident.	Foreign.	Total.	Life.	Absent.	Special Non-Subscribing.	Total.	
1899	120	119	13	252	21	27	1	49	301
1900	116	124	18	258	22	30	1	53	311
1901	123	133	13	269	22	36	1	59	328
1902	126	126	14	266	21	46	1	68	334
1903	127	126	15	268	21	45	1	67	335
1904	132	130	14	276	21	45	1	67	343

The five Ordinary Members, whose loss by death during the year we have to regret, were Dr. U. C. Mukerjee, Mr. A. T. Pringle, Mr. H. M. Rustomjee, Dr. Mahendralal Sircar and Dr. C. R. Wilson.

There was one death amongst the Honorary Members, *viz.*, Dr. Otto von Böhtlingk. To fill this vacancy and others previously existing, the Society on the recommendation of the Council elected as Honorary Members, Professor H. Kern, Professor Ram Krishna Gopal Bhandarkar, Professor M. J. DeGoeje, Professor Ignaz Goldziher, Sir Charles Lyall, Sir William Ramsay, and Dr. G. A. Grierson.

The List of Special Honorary Centenary Members and Associate Members continued unaltered from last year; their numbers standing at 4 and 13 respectively.

Intimation was received of the death of Dr. Emil Schlagintweit, the only Corresponding Member of the Society.

No members compounded for their subscription during the year.

Indian Museum.

There was only one change amongst the Trustees; it was caused by the death of Dr. Mahendralal Sircar, and Mr. J. Macfarlane was appointed to fill the vacant place.

The other Trustees who represent the Society have been:—

The Hon. Mr. A. Pedler, C.I.E., F.R.S.
G. W. Küchler, Esq., M.A.
T. H. Holland, Esq., F.G.S., F.R.S.
The Hon. Sir J. A. Bourdillon, K.C.S.I.

Finance.

The accounts of the Society are shown in the Appendix under the usual heads, and besides in this year's account there is an additional statement under the head "Arabic and Persian Manuscripts." Statement No. 9 contains the Balance Sheet of the Society and of the different funds administered through it.

The financial position of the Society shows an improvement, and the credit balance at the close of the year amounts to Rs. 1,92,939-7-5, which is more than eleven thousand rupees in advance of last year, and is chiefly due to the special Government grant of Rs. 10,000.

The Budget for 1904 was estimated at the following figures:—Receipts Rs. 17,700; Expenditure Rs. 25,374-4 (Ordinary Rs. 17,254-4; Extraordinary Rs. 8,120.) Taking into account only the ordinary items of receipts and expenditure for the year 1904, the actual results have been:—Receipts Rs. 30,368-13-8; Expenditure Rs. 14,134-0-7, showing a balance (after setting aside the special grant of Rs. 10,000) in favour of the Society on its ordinary working of Rs. 6,234-13-1. Against this balance, there have been several extraordinary items of expenditure amounting to Rs. 5,182-8-10; the net balance is Rs. 1,052-4-3. There is a Temporary Investment of Rs. 48,300, at the close of the year. out of which Rs. 33,259-5-7 is in favour of the Society, Rs. 5,097-1-3 Oriental Publication Fund, Rs. 3,578-0-5 Sanskrit MS. Fund, and Rs. 6,365-8-9 Arabic and Persian MS. Fund. In addition to this, a sum of Rs. 1,088 has been added to the Reserve Fund from entrance fees paid during the year.

There is an increase in receipts under every head except "Miscellaneous," which has fallen off very slightly.

The ordinary expenditure was estimated at Rs. 17,254-4-0, but the amount paid out was only Rs. 14,134-0-7. The principal items in excess were "Postage," "Freight," "Books," "Proceedings," and the increase was caused by larger transactions and the payment of outstanding printing charges and of Messrs. Luzac and Co's account from April 1902 to October 1904. The actual expenditure on the Journals was Rs. 3,673, against a budget provision of Rs. 6,200. The balance is due on outstanding printing bills.

There were three extraordinary items of expenditure during 1904 under the heads "Furniture," "Pension" and "Building" not provided for in the Budget. New furniture was required, the lavatory arrangements were improved, and on the retirement of the Cashier, a pension of Rs. 112, at the rate of Rs. 20 per month; has been paid to him, and in his place Babu Asutosh Dhur has been appointed.

The expenditure on the Royal Society's Catalogue (including subscriptions sent to the Central Bureau) has been Rs. 5,842, while the receipts under this head from subscriptions received on behalf of the Central Bureau (including the grant from the Government of India) Rs. 5,352. A sum of Rs. 610 is due to the Central Bureau and will be sent.

Four extraordinary items of expenditure were budgetted for. Out of the sum of Rs. 1,000 for the salary of the Assistant engaged in revising the Library Catalogue, Rs. 81 only have been spent, as his services have been dispensed with. Rs. 1,800 were assigned for cleaning, varnishing and relining the Society's pictures, and Rs. 1,306 have been spent; but a sum of Rs. 500 which had been advanced to the late Mr. A. E. Caddy, for cleaning the pictures, has been written off as unrecoverable on his death, and Rs. 566 have been spent on the freight, etc., due on the frames which were procured from England, while their cost has yet to be paid. Rs. 2,320 were paid for renewing the floor of the entrance hall, which is now greatly improved, and Rs. 366 were spent in additions to the lavatory arrangements.

The Budget Estimate of Receipts and Disbursements for 1905 has been fixed as follows:—Receipts Rs. 18,100, Expenditure Rs. 17,654. The item "Rent of Rooms" has been increased, as one room has been rented to the Automobile Association of Bengal at Rs. 50 per month. On the expenditure side, the items "Freight" and "Journal Part III" have been increased, as greater activity is expected. "Insurance" has been reduced by half owing to the removal of the Photographic Society of India. The item, "Registration Fees" has been omitted, as under the Act no fee will be charged for filing copies of the Society's papers. There is a new item of Rs. 192 under the head "Pension."

Three extraordinary items of expenditure have been budgetted for during the year 1905, namely, Rs. 1,000 for the new Library Catalogue, Rs. 2,809 for reframing the pictures, and Rs. 1,220 for white-washing and colourwashing part the Society's premises. Besides these provisions, the application of the special grant of Rs. 10,000 from the Government towards the thorough repair and improvement of the Society's premises is under careful consideration.

BUDGET ESTIMATE FOR 1905.

Receipts.

	1904. Estimate.	1904. Actuals.	1905. Estimate.
	Rs.	Rs.	Rs.
Subscriptions	7,500	8,719	7,800
Sale of Publications ...	600	1,053	600
Interest on Investments ...	6,000	6,787	6,000
Rent of Rooms	500	730	600
Government Allowances ...	3,000	13,000	3,000
Miscellaneous	100	80	100
Total ...	17,700	30,369	18,100

Expenditure.

	Rs.	Rs.	Rs.
Salaries	3,800	3,460	3,800
Commission	425	376	425
Pension	...	...	192
Stationery	120	134	120
Lighting and Fans ...	320	218	320
Municipal Taxes	884	884	884
Postage	500	567	500
Freight	75	129	100
Meetings	100	105	100
Contingencies	500	459	500
Books	2,000	2,135	2,000
Binding	700	599	700
Journal, Part I	2,100	1,437	2,100
,, ,, II	2,100	1,381	2,100
,, ,, III	2,000	855	2,500
Proceedings	600	753	600
Printing Circulars, &c. ...	200	200	200
Registration Fee	5	...	...
Auditor's Fee	100	100	100
Petty Repairs	100	29	100
Insurance	625	313	313
	17,254	14,134	17,654

Extraordinary Expenditure.

	1904. Estimate.	1904. Actuals.	1905. Estimate.
Library Catalogue ...	1,000	81	1,000
Royal Society's Catalogue ...	...	5,842	...
Cleaning and Varnishing Pictures	1,800	1,306	...
Picture Frames	3,000	566	2,809
Repairs	2,320	2,686	...
Furniture	...	354	...
Pension	...	112	...
Building	...	78	1,220
	8,120	11,025	5,029

Agencies.

The Council has transferred the London Agency of the Society—from Messrs. Luzac & Co. to Mr. Bernard Quaritch, 15 Piccadilly.

During the year no publications have been sent to Messrs. Luzac & Co., pending the settlement of the question of Agency, but from them we have received books and papers of the value of £28-13-5. They have submitted a statement of their accounts to the end of October 1904, and the balance of £36-6-11 due to them has been remitted in full settlement of their account.

Two consignments of publications have been sent to Mr. Quaritch since his appointment as the Society's London Agent, amounting to £60-17 and Rs. 533-2, being value of 480 copies of the various issues of the Journals and Proceedings and of 741 fasciculi of the Bibliotheca Indica, respectively.

Our Continental Agent is Mr. Otto Harrassowitz, to whom we have sent publications valued at £19-17-6 and Rs. 560-8, of which £19-14-4 and Rs. 229-11-9 worth have been sold for us.

Library.

The total number of volumes or parts of volumes added to the Library during the year was 2,949, of which 675 were purchased and 2,274 presented or received in exchange for the Society's publications.

The MS. of the new edition of the Society's Library Catalogue, after careful revision by the members of the Library Committee, was sent to the Press at the beginning of Jannary 1905.

The Government of India, with the assent of the Council, decided to publish a combined subject-index of the books in European languages in the Society's Library and the Imperial Library. This is expected to be in print early in 1906.

In continuation of the Council order, the Imperial Library has been allowed to borrow books and MSS. from the Society for the use of its readers until the end of August 1905. During the period from 28th January to 31st December, 1904, 26 books and 5 Manuscripts have been thus borrowed.

In connection with the proposed rejection of certain books from the Society's Library, the General Meeting resolved (1) that the books weeded out by the Committee be rejected and disposed of, the Medical works being placed in a collection by themselves; (2) that the best way of disposing of them is by sale, and that they be accordingly offered for sale; (3) that the first offer be made to the Imperial Library, and that, if it purchases any of these books, the prices of the books be settled between the Council and that Library according to the price-catalogues of Quaritch and other booksellers; (4) that the next offer be made to the Calcutta University, the Presidency and other Colleges and the Medical College, and that the prices of books bought by them be settled similarly; (5) that the remainder of the rejected books be disposed of by public auction under some arrangement by which members and others can bid, and by which real prices may be obtained if possible; and (6) that all books rejected and disposed of be first stamped plainly and indelibly with a special stamp.

International Catalogue of Scientific Literature.

During the year, the two remaining volumes of the first annual issue and the volumes of the second annual issue, with the exception of the volumes on Chemistry, Meteorology, Botany and Zoology have been received and distributed.

Of the third annual issue the volumes on Physics and Astronomy have been published but have not yet been received.

A great falling off among subscribers for the second and subsequent issues has to be here recorded. The Agent to the Governor-General in Rajputana (four sets), the Agent to the Governor-General in Central India (two sets), the Bombay University Library (one set) and the Native General Library, Bombay (one set), are the most important; special part subscribers have in three instances discontinued their subscriptions.

The Director at the Central Bureau was informed of the number of copies thus left in hand, and he advised that they should be returned to London. The books have been packed up and will be sent off soon.

All the subscriptions for the first annual issue, with two or three exceptions, have been received. A sum of £340, representing subscriptions for 20 complete sets, and another sum of £17-15-0 for special parts, have been remitted to the Central Bureau during the year.

The sanction of the Government of India was obtained during the year to the expense of postage in the distribution of the Catalogue being met from the grant.

Owing to the illness of the clerk during three months of the year a number of index slips were left over; these after being checked by the experts will be despatched shortly. The number of slips sent to London was 71.

Mr. W. D. Wright was appointed Clerk attached to the Regional Bureau of the Royal Society in the place of Mr. J. B. Richardson, resigned.

Elliott Prize for Scientific Research.

A sum of Rs. 1,000 out of the accumulated interest on account of the Elliott Prize Fund in the hands of the Accountant General of Bengal has been invested in 3½ per cent. Government securities; and the Council has decided to reserve the power to make use of this investment, if required by the Trustees, in awarding the prize.

Barclay Memorial Medal.

In connection with the Barclay Memorial Medal, the following gentlemen were appointed to form a special Committee to make the award during 1905 Captain L. Rogers, I.M.S., the Natural History Secretary; Mr. N. Annandale, Captain A. T. Gage, I.M.S., Mr. H. H. Hayden, and Major F. J. Drury, I.M.S.

The Society's Premises and Property.

The Council met several times to consider a letter from the Secretary to the Trustees of the Victoria Memorial, suggesting the loan of certain portraits and other objects of interest to the Victoria Memorial Hall, and, on the matter being referred to the general body of members, under rule 64A, it has been decided to lend certain specified objects for exhibition in the Victoria Memorial Hall, namely, the following portraits and other objects :—

Two portraits of the Society's founder Sir William Jones (one of him as a youth and the other in middle age) (Nos. 67 and 41);
the portrait of Warren Hastings (No. 65);
the bust of James Prinsep (No. 19);
the old cannon of Mir Jumlu (No. 2);
a Ms. of the Gulistan (No. 114);
a Ms. of the Bādshāh-nāma (No. 118);
three old copper-plate inscriptions (No. 126, found at Amgāchi; No. 135, found in the Sambalpur district; and No. 136, found at Angāsi);
a stone edict of King Aśoka (No. 25);

a portrait of Shāh Ghāzi-ud-din Haidar, King of Oudh (No. 26);
a portrait of James Grant Duff, author of the "History of the Mahrattas" (No. 51);
a painting of the interview between the Governor-General and the Raja of Kota, (No. 107); and
a portrait of Nasarat Jang, Nawab of Dacca (No. 91).

This decision was communicated to the Trustees. They asked that these objects might be placed at their disposal at once, with the exception of the Aśoka stone, for exhibition along with the other Victoria Memorial Exhibits in the galleries of the Indian Museum, and the Council have handed over the objects for exhibition in the Indian Museum Gallery during the cold season of 1904-5 with the request that the objects be returned when the exhibition closes, to be on view in the Society's rooms.

During the year certain portions of the Society's rooms were whitewashed and colourwashed; and the Council has now under consideration a proposal to execute thorough repairs and certain structural improvements in the Society's building. The cost will be great, but will be chiefly met out of a grant of Rs. 10,000 which the Government of India has generously made to the Society for the purpose. The estimates are now under consideration.

All the pictures of the Society have been cleaned and varnished at a cost of Rs. 1,306, and new frames have been received from London. The pictures will be reframed as soon as possible.

Exchange of Publications.

During 1904, the Council accepted eight applications for exchange of publications, *viz*: (1) from the Botanic Institute of Buitenzorg, Java, the Society's Journal Part II and Proceedings being exchanged for their "Annals" and "Icones Bogorienses"; (2) from the Schlesische Gesellschaft für vaterländische Cultur, Breslau, the Society's Journal Parts I—III and Proceedings being exchanged for the publications of that Society; (3) from the University of Montana, the Society's Journal Parts II and III for the "Bulletin"; (4) from the R. Accademia dei Lincei, Rome, the Society's Journal Part I-III and Proceedings being exchanged for the publications of the Academy: (5) from the Société d'Ethnographie, Paris, the Society's Journal Part III, for their "Bulletin"; (6) from the Société Royale Belge de Géographie, Brussels, the Society's Journal Part III being exchanged for their "Bulletin;" (7) from the Department of Fisheries, Sydney, the Society's Journal Part II, for their "Report"; and (8) from the Archæological Survey Department of India, the Society's Journal Parts I and III being exchanged for the publications of that Department.

In addition to these exchanges, the Imperial Library and the Lucknow Provincial Museum have been placed on the distribution list of the Society's publications.

Secretaries and Treasurer.

Dr. E. D. Ross carried on the duties of Philological Secretary till April, when Dr. T. Bloch returned from tour and took charge of the office in addition to the editorship to the *Journal Part I*, and the numismatic work which he had retained. Dr. Bloch continued till November: he left then on tour, and Dr. Ross consented to undertake both the duties, while Mr. H. N. Wright was in charge of the numismatic work.

Captain L. Rogers, I.M.S., continued Natural History Secretary and editor of the *Journal Part II*, throughout the year.

Dr. Ross continued Anthropological Secretary and editor of the *Journal Part III*, till July, when he left India on leave for three months, and Mr. J. Macfarlane took charge of his work during the interval. In December, Mr. N. Annandale was permanently appointed Anthropological Secretary in the place of Dr. Ross, who resigned.

Dr. C. R. Wilson continued to be Treasurer till April, when he left for Darjeeling. The Hon. Mr. Justice Asutosh Mukhopadhyaya consented to officiate during his absence, and when Dr. Wilson resigned his office, because of ill-health in May, he was appointed permanently to this position. During October he left Calcutta for a few weeks and Mr. W. K. Dods officiated for him.

Mr. Macfarlane continued General Secretary and editor of the *Proceedings* throughout the year, except during three months, from May to July, when he went to Europe on leave, and Lt.-Col. J. H. Tull Walsh, I.M.S., took charge of the work.

Mahamahopadhyaya Haraprasad Shastri, was in charge of the Bibliotheca Indica and the Search for Sanskrit Manuscripts, and carried on the duties of the Joint Philological Secretary throughout the year.

Mr. J. H. Elliott continued Assistant Secretary and Librarian throughout the year.

Publications.

There were published during the year ten numbers of the Proceedings (Nos. 9—11 of 1903 and Nos. 1—7 of 1904) containing 115 pages.

Of the Journal, Part I, five numbers were published (No. 2 of 1903 and Nos. 1—4 of 1904) containing 472 pages and 9 plates. The Numismatic Supplement has been published in Journal Part I, nos. 1, 2 and 4, under the editorship of Mr. Wright.

Of the Journal Part II, six numbers were published (No. 4

of 1903 and Nos. 1—5 of 1904) containing 358 pages and 9 plates. The Index for 1903 was also published.

Of the Journal Part III four numbers were published (Nos. 1—4 of 1904) containing 77 pages and 4 plates. The Index for 1903 was also published.

The other publications issued during the year were the 4th fasciculus of the Catalogue of the Society's Sanskrit Books and Manuscripts, and the 2nd fasciculus of the Catalogue of the Society's Arabic Books and Manuscripts.

Proceedings.

All important papers noticed in the Proceedings have appeared in full in the various parts of the Journal, only small papers and abstracts of the important papers being published in the Proceedings. The Rev. P. O. Bodding contributed a paper on Shoulder-headed and other forms of stone implements in the Santal Parganas. Of the implements those with square edges are supposed to be very rare in India. Mr. E. H. Walsh described certain stone implements found in the Darjeeling District, which are locally believed to be the weapons of gods and to possess various protective and medicinal powers. Mr. C. Little contributed two papers, one on the Himalayan Summer Storm of September 24th 1903, and the other on the Cyclone of 13th November 1903 in the Bay of Bengal; both have been published in the Journal with maps. Mahamahopādhyāya Haraprasad S'astri exhibited two Bengali documents obtained from Rāi Jadunāth Mozumdār Bāhādur of Jessore, in which the executant purported to sell himself and his family into slavery. One was executed during the later part of the Emperor Aurangzeb's reign and the other during the great famine of 1176 B.S. Among other exhibitions one may be mentioned by Pundit Yogeśa Chandra S'āstree of two important copper-plate grants from Rajputana and Guzerat and a beautiful image of Manjunath, a Buddhist deity, brought from Lhassa. Major P. R. T. Gurdon, I.A., contributed Notes on the Khasis, Syntengs, and allied tribes inhabiting Khasia Jaintia hill district in Assam. These tribes are matriarchal; and among them the youngest daughter inherits from the mother; failing daughters, the property passes to the youngest niece; and failing a niece, to the youngest female cousin. Babu J. M. Dass in his paper "Notes on the titles used in Orissa" said that the Oria people are very fond of titles, which they accept not only from the Raja of Puri but also from great landlords and even from their castemen, while new titles are still being invented.

Journal Part I.

Five numbers were published during the year under review, namely, No. 2 of Vol. LXXII and Nos. 1-4 of Vol. LXXIII. The papers published in these numbers are of historical and linguistic value and ranged from the 6th century B.C. to the 19th century and from the Eastern extremity of Assam to the Western provinces of the Indian Empire.

Taking the papers chronologically :—Babu Parmeshwar Doyal identified the Prāgbodhi cave, where Buddha sat in meditation for some time before he came to Budh Gaya, with a stone chamber about 14 or 15 li from the Bodhi tree in the range of hills called by General Cunningham. Prāgbodhi mountain. The chamber, says the writer, had never before been visited by an antiquarian.

The late lamented Dr. C. R. Wilson identified Sandanes of the Periplus with Sundara Sātakarṇi of the Purāṇas and placed his short reign between 83 and 84 A.D.

Babu Gangamohan Laskar, a research scholar, has deciphered three copper-plates from Khurda written in what is called the Kuṭila variety of the Nāgarī character and placed the donor of the grant before the latter half of the 7th century. These plates give some information about the S'ailodbhava dynasty of Kalinga, with seven kings. This dynasty was already known from the Baguḍa plates explained by Dr. Kielhorn.

Mr. W. N. Edwards and Mr. H. H. Mann described some interesting fortifications situated just over the boundary line of British territory in the independent Daphla country and gave the local traditions connected with them. These traditions reach back to the 13th century of the Christian era.

Babu Monmohan Chakravarti's paper on the Chronology of the Eastern Gaṇga kings of Orissa has already been referred to in the last Annual Report. It is a scholarly paper giving a collected history of these kings from the 11th century to the 15th century based upon inscriptions. The author says, " Their history (*i.e.* of the kings of the Gaṇga dynasty) now rests on surer grounds than the unreliable traditions embodied in the Mādaḷā Pāñji."

The works of the genealogists or ghaṭakas of Bengal have never been explored by Oriental scholars, yet they embody valuable information about the great races inhabiting Eastern India from the 7th century downwards. For this reason we welcome Pundit Yogeśa Chandra S'āstree's paper on the Kap section of the Varendra class of Brahmans, though short, as the beginning of an important line of research.

Coming down to Mahommedan history, Mr. Beveridge has criticised General Maclagan's paper on the Jesuit Mission to the Emperor Akbar published in our Journal for 1896, p. 38, and a portion of Dr. Wise's paper on the " Bāra Bhūyas of Eastern Bengal " published in our Journal for 1874. In the former the writer expatiated on certain chapters of the Ain-i-Akbari dealing with the position of Akbar as a founder of a religion ; and in the latter the author gave much valuable additional information about Isā K͟hān, one of the twelve Bhūyas. Mr. W. Irvine's monograph on the Later Mug͟hals is continued. Mr. J. F. Fanthome's paper headed "A Forgotten City" deals with Nagarchain, the halting-station or villa of the Emperor Akbar, a few miles from Agra, which rose to be a city in the early part of his reign but was lost sight of before his death, and can with difficulty be identified at the present moment.

"The Mints of the Mughal Emperors," by Mr. Burn, gives a list of the mint towns of the Mughal Emperors arranged in alphabetical order and divided into chronological sections. Mirza Mehdy Khan criticised the translation of the Quatrains of Baba Tahir by Mr. Heron-Allen and gave an edition of these. Mr. H. R. Nevill's paper on Mahals in Sarkar Lakhnau and Maulavi Abdul Wali's paper on the Antiquity and Traditions of Shahzadpur, throw some light on obscure points of Mohammedan history.

Coming to modern History, Babu Gerindranath Dutt's history of the Hutwa Raj is an important contribution on the struggles which the English Government had in the revenue settlement of the Provinces of Lower Bengal for 30 years or more from the date of the Diwani. When writing in our Proceedings for 1888 on the Dutch hatchments in Chinsura Church, Mr. Beames left some initials undeciphered. The late Dr. C. R. Wilson studied Dutch heraldry and identified these names. His paper is to be found in vol. LXXIII, No. 3.

Of the linguistic papers the most important is that by Major P. R. T. Gurdon on the Morans, a tribe inhabiting the hills in the Assam valley. By a comparison of the words in their language with those of Kacharis, Bodos and Dimasas, Major Gurdon says that they are allied to the Kacharis. Babu Gerindranath Dutt's paper on the Bhojpuri dialects spoken in Saran is a revised edition of the notes supplied by him to the Linguistic Survey.

Of the Tibetan papers, those by Mr. E. H. Walsh have already been noticed in the last Report. The only interesting additional paper received during the year under review is by Rev. A. H. Francke entitled "A Language Map of West Tibet with notes" prepared for the benefit of the students of his Ladaki Grammar.

There has unfortunately been some irregularity in the issue of the Society's Journal, Part I, and it has now been decided to issue the Journals promptly, publishing such material as is available, and at least quarterly.

Journal Part II.

The past year has been one of great activity in the Natural History section of the Society, no less than six numbers of Part II of the Journal having been issued with 358 pages and nine illustrative plates, this quantity being more than three times as much as in the preceding year. This is due partly to the fact that some papers read during 1903 were published during the past year, and partly to the greater efforts that have been made to publish papers more rapidly than has hitherto been done; hence only two papers read recently remained in hand at the end of the year.

Botany has been specially well represented. The papers published include two important memoirs on "Materials for a Flora of the Malayan Peninsula" by Sir George King and Mr. J. S. Gamble, in which the natural orders Caprifoliaceæ and Rubiaceæ are dealt with; Nos XXI to XXIV of the Noviciæ Indicæ and three other papers describing new plants by Major D. Prain, I.M.S.; two joint papers by Major Prain and Mr. I. H. Burkill on Dioscoreæ or Yams; and one by Mr. J. R. Drummond on a new Scirpus.

The Zoological contributions include three papers on the life-history of certain insects of economic importance, by Mr. E. P. Stebbing, a paper on Additions to the Oriental Snakes at the Indian Museum by Mr. Nelson Annandale, and another by the same author (not yet published) on the Lizards of the Andamans.

Among the other contributions of interest must be mentioned a series of four papers, illustrated by plates, on "Cyclones in the Bay of Bengal" and on "Himalayan Summer Storms" by Mr. C. Little, and two by Mr. D. Hooper on the occurrence of Melanterite in Baluchistan and on Rusot, an ancient Eastern Medicine.

Adopting a proposal made by Major Prain, I.M.S., the Council resolved to hasten the publication of Sir George King's "Materials for a Flora of the Malayan Peninsula" by having it printed in London, and to issue it as an "Extra Number" of the Society's Journal, Part II.

Journal Part III.

Four numbers have been issued, three containing supplements as well as long communications. The papers are of considerable importance, for they are concise statements by men who have had opportunities of studying the less accessible Indian races or the archæology of interesting localities. Mr. J. E. Friend-Pereira contributed an Essay on the septs of the Khonds and the customs which regulate intermarriage among them; the Rev. E. M. Gordon and Major P. R. T. Gurdon have dealt, chiefly from a cultural standpoint, with primitive tribes in the Bilaspore district and in Assam respectively; the Rev. P. O. Bodding and Mr. E. H. Walsh have described stone implements from different parts of India; and various authors have furnished shorter notes and papers on other points in ethnography or sociology. The matter printed fills 77 pages and is illustrated with four photographic plates.

It has been decided that the subject of National Indian Hymns and Popular Chants might well be taken up by the members of the Society in connection with the Journal Part III.

Coins.

Ten copper coins and 13 silver coins have been presented to the Society in 1904. The copper coins belong to the following Pathān Sultans of Delhi :—

Jalāluddīn Fīroz Shāh ...	... 1
‘Aṭā’uddīn Muḥammad Shāh ...	... 1
Muḥammad ibn Tughlaq Shāh ...	... 1
Fīroz Shāh Tughlaq ...	... 6
„ with Fatḥ Khān ...	... 1

Of the 13 silver coins 4 are coins of the East India Company struck in the name of Shāh ‘Ālam at the Muḥammadābād-Benares Mint ; one belongs to the kings of Oudh, and the remaining eight are coins of the following Mughal Emperors :—

Jahāngīr	... 1
Aurangzeb	... 1
Farrukhsiyar	... 1
Muḥammad Shāh	... 1
Aḥmad Shāh	... 2
‘Ālamgīr II.	... 1
Shāh ‘Ālam II.	... 1

In accordance with the Council order to lend to the Trustees of the Indian Museum as many of the Society's coins as may be required by them for the purpose of classification and exhibition along with the Museum coins, all the coins have been made over to the Indian Museum for selection and for return of the remainder not required by them.

In July 1904, the Council resolved to separate the Society's numismatic work from that of the Philological Secretary, and Mr. H. Nelson Wright, I.C.S., was appointed Honorary Numismatist of the Society.

Bibliotheca Indica.

In the year 1903, thirty-five fasciculi were published—a larger number than in any previous year. During 1904, however, forty-two fasciculi have been published, showing an unprecedented activity in the publication of the Bibliotheca Indica.

The cost of printing these forty-two fasciculi is Rs. 1.076 and the cost of editing Rs. 4.971 ; the average cost for each fasciculus being Rs. 375.

These fasciculi contain twenty-five works, of which two are in the Arabic-Persian and the rest in the Sanskrit series. According to resolution of the Council a description is to be given in the annual report only of such works as are either commenced or ended. In the case of the first, the description serves as an introduction and in the case of the last as an advertisement. The Arabic-Persian series contains translation of the Akbarnāmah and Riyāẓu-s-Salāṭīn. In the Sanskrit series too there are three English translations, namely, Mārkaṇḍeya Purāṇa, Tantra Vārtika and Sloka Vārtika. The last two are editions of Sanskrit works of rare value which have no chance of being published by private enterprise. Two of these belong to Jaina literature, namely, the Tattvārthādhigama Sūtra and Upamitibhava-prapañcākathā: the first was composed by Umāsvati Vācaka in the 1st Century A.D. at Pātaliputra, and the second by Siddharṣi, reputed to be the brother's son of the poet Māgha, in the beginning of the 10th century. There are two Buddhist works among these, namely, the Bodhicaryāvatāra by S'ānti Deva in the 7th century, and the S'atasāhasrika Prajñāprāmitā attributed to Nāgārjuna, the founder or at least the first great writer of the Mahājāna School, in the 2nd century A.D. Several other works are in the course of publication of which no mention is made here, since no fasciculi have been published during the year.

Of the Brāhmanic Sanskrit works two belong to the Orissa school of Smṛti, two to the Bengal, one to the Bombay, and one to the Benares school; one to the Rāmānuja School of the Vedanta, one to the Saṅkara School, and to the Mīmāṁsā School.

Of the works that have been completed, the Riyāẓ-ūs-Salāṭīn belongs to the Arabic-Persian series. It is an English translation of a history of Bengal composed by G͟hulām Ḥusaiṅ Salīm between 1786 and 1789. The translation has been made by Maulavi Abdus Salām, M.A., of the Bengal Provincial Service, and he has elucidated it with ample footnotes and enriched it with an elaborate table of proper names. The Riyāẓ-ūs-Salāṭīn is the only comprehensive history of Bengal, and Stewart's History of Bengal is based upon it. Dr. Blochmann long ago strongly recommended that it should be translated, and the translation has now been accomplished.

Since H. H. Wilson translated the Viṣṇu Purāṇa, no sustained effort was made to translate any other Purāṇa till in 1884 Mr. Justice Pargiter (now our President) undertook the translation of the Mārkaṇḍeya Purāṇa. Onerous official duties and other difficulties impeded the preparation of the work with the notes. The progress was slow, but the translation has at length been brought to a close. It is accompanied by a full index and a preface in which the translator expresses the opinion that the Purāṇa had its origin in the Narbada valley, and that parts of it may be as old as, if not older than, the Christian era.

Godādhara Rājaguru, who flourished by the middle of the 18th Century, was the spiritual guide of the Gajapati Rājās of Puri. He compiled a complete code of Hindu law and ritual for Orissa. As no Hindu work from Orissa had ever been published, the publication of this work was thought desirable. and it was placed in the hands of Paṇḍit Sadā S'iva Miśra, a well-known paṇḍit of Orissa. The work consists of three volumes, of which the first has been completed with an elaborate index.

Last year was notified the completion of the Varṣakriyā Kaumudi, by Govindānanda Kavikaṅkanācārya; and the other work by the same author, belonging to the same code of Hindu law and ritual, has been completed this year, namely the S'rāddhakriyā Kaumudī, by the same young editor Paṇḍit Kamal Kṛṣṇa Smṛtibhāṣaṇa of Bhāṭpārā. He has added a full subject index of the work.

The new works undertaken during the year are:—

The Baudhāyana S'rauta Sūtra. Professor Hillebrandt of Breslau, the great authority on Vedic subjects, undertook the edition of three Vedic works for the Bibliotheca Indica, namely, Sāṅkhāyana, Baudhāyana and Hiraṇya-Keśī's S'rauta Sūtras. He completed the Sāṅkhāyana Sūtra and transferred (with the consent of the Council) the editorship of Baudhāyana's work to Dr. W. Caland of Utrecht. Dr. Caland has published two fasciculi of the work during the year under review. Baudhāyana's School is still current in Southern India, and he seems to have flourished several centuries before Christ.

The Bālambhaṭṭī or Lakṣmī is a commentary on the Mitākṣarā, by Bālambhaṭṭa Pāyaguṇḍa of Benares in the 18th century. It is an important work on the Hindu Law of the Benares school, and the Hon'ble Mr. Justice Āśutosh Mukhopādhyāya obtained the permission of the Council to edit it. But his numerous engagements afforded him little leisure, and the editorship was transferred to Babu Govinda Dās of Benares, who has published the first fasciculus during the year under review.

The Caturvarga Cintāmaṇi, by Hemādri, the Minister of the Yādava Kings of Devagiri, about the middle of the 13th century, is an encyclopedic work on Hindu Laws and rituals of great value. As it quotes from a variety of works, the publication of the entire work was considered forty years ago to be of great importance, as giving the names of Sanskrit works existing before Hemādri's time. The work is divided in parts or kaṇḍas, three of which have already been published during the last forty years. MSS. of the other parts not being procurable, the publication was kept in abeyance. During the past two years, however, the MS. of a fourth part, the Prāyaścitta-khaṇḍa, being available, the Council requested Paṇḍit Pramatha Nāth Tarkabhūṣan, Sanskrit Professor in the Sanskrit College, Calcutta, to undertake the editing of it. He has issued three fasciculi of the work this year.

The Vallāla-carita purports to be biography of Vellāla Sena, a great King of Bengal who reigned during the middle of the 12th century. It was composed from old materials by Ānanda Bhaṭṭa in the beginning of the 16th century at Navadvīpa. Several incomplete and partial reprints of the work were published in the Bengali character in Calcutta, but no authentic MS. was forthcoming. During the caste agitation that arose after the census of 1901, two authentic MSS. of the work, were placed in the hands of Mahāmahopādhyāya Haraprasād Sāstri, and the Council requested him to publish the work in Deva Nāgarī with an English translation and historical notes. The first fasciculus has been published containing the text only. The translation and notes are in the course of preparation.

Search for Sanskrit MSS.

This department of the Society's work was, as in previous years, in the hands of the Joint Philological Secretary. He paid several visits to Benares and other places, and with the assistance of his travelling paṇḍits collected more than 1,200 MSS. and about 300 notices of MSS. So much material has been collected that it is now possible to give a connected history of Hindu literature during the whole of the Mohammadan period and to check in many important instances the statements of Mohammadan historians about the Hindus. A complete list of the names of the MSS. in the entire Government collection, now amounting to nearly 7,000 MSS., has been prepared in alphabetical order for publication. The second volume of the second series of notices of Sanskrit MSS. has been published. The third volume has been printed, and the Nepal Catalogue is in type; and both will shortly be published. The fourth and fifth volume are ready in manuscript and will soon be sent to press.

The President was empowered to apply to the Government of India for a special grant for the purchase of about 2,000 Jaina works in Sanskrit, Prakrit, Guzerati, Hindi, Marwari and other languages on behalf of the Government, if, on further examination of the manuscripts, he is assured that the collection is valuable enough to warrant such an application. The application has been made.

The notices of Hindi manuscripts collected by the Society's agents during the year 1895 have been made over to the Nāgarīpra-chārini Sabhā of Benares for publication at the Society's cost.

Search for Arabic and Persian Manuscripts.

In answer to the representation made by the Society to the Government of India, in favour of a systematic search for Arabic and Persian MSS., the Government approved of the scheme and sanctioned an annual grant of Rs. 5,000 for a period of five years for its prosecution, and a further annual grant of Rs. 2,000 for the same period, for the purchase of manuscripts of exceptional value and interest. The search is in charge of Dr. Ross, and he has appointed two Travelling Maulavis and a Resident Maulavi to assist him in this work.

The Report having been read and some copies having been distributed, The Hon'ble Mr. Pargiter, President, gave his Annual Address.

Annual Address, 1904.

The Secretaries have laid before you their combined report setting out briefly the business that has been transacted by the

Society or that has come before it during the past year, and it remains for me to offer some remarks on its affairs during the same period.

The matter that engrossed the largest share of time has been the preparation of the new catalogue of the books in the Society's Library. The catalogue now in use was published twenty years ago, when the Society celebrated its centenary, and the need of a revised one has been felt for some years past. A new catalogue has been gradually compiled in manuscript, and there remained the arduous business of making a thorough revision of it. This has been carried through by the Library Committee with the help of the General Secretary, who, as a skilled librarian, was specially qualified to deal with it. The members of the Committee have given liberally of their time and have held many meetings to complete the revision; and but for the care, and I may say devotion, which they and the Secretary have bestowed on it, it could not have been carried through with any expectation that the catalogue would be full, accurate and useful. In this matter two tasks called for special consideration—first, the revision of the Library itself and the separating out of books and pamphlets that are not needed by the Society; and secondly, the framing of the entries in the most serviceable shape.

A considerable quantity of publications had accumulated which appeared to be either superfluous or of too little use to the members, and it was desirable to remove them because of the limited space and for economy. These were separated as the revision went on. The principles adopted were two, first, that the Library should aim at completeness in all publications relating to Asia in conformity with the Society's name and scope, whatever might be their character or value, official reports and publications being placed in a separate category; and secondly, that the Library could not maintain works relating to other parts of the world except such as are of general interest and high reputation. Yet the process of exclusion was applied with so conservative a spirit that nothing was put out unless the members of the Committee were unanimous. A list of the works thus excluded was laid before the monthly meeting in June for general consideration, and has been passed without objection. These will be disposed of as mentioned in the Report.

The second task dealt with the method of cataloguing the names of Oriental authors, and the Committee decided that no single method was feasible, and that the most convenient course was that, while the names of authors now living or recently deceased should be spelt as the authors themselves Anglicized them, the names of all others should be transliterated correctly in the headings according to the system approved by the Society.

The catalogue is now in the press, and the Council trust that it will be as complete, accurate and useful as is possible in such an undertaking. When it is published, members will be able to keep their copies correct up to date, since lists of the additions are published quarterly with the Proceedings.

Another important matter was the part which the Society was able to take in contributing to the objects to be exhibited in the Victoria Memorial Hall. The Society's existence is nearly coeval with British rule in Bengal, and it has represented the linguistic, scientific and literary activity of this rule. It has numbered among its members, besides its founder, some of the most distinguished men whose services have helped to make India what it is now, and it possesses unique memorials of them. The members resolved, with but little difference of opinion, to lend some of the most interesting of their treasures to the Trustees of the Memorial Hall to be exhibited there. The Society is gratified at this public recognition of its achievements, and cannot but gain by the wider interest which the exhibition of these objects will arouse among those who will visit the Memorial.

The collection of Oriental MSS. is an important branch of the Society's work. The Society has received during many years an annual grant from the Government for the systematic search after and the purchase of Sanskrit MSS. This is in the charge of the Joint Philological Secretary, Mahāmahopādhyāya Haraprasād Sāstrī. He has found and acquired a large number of valuable and interesting writings. No similar measures have hitherto been taken to collect Persian and Arabic MSS. from among the stores that exist in this country, except such as private persons have undertaken at times on their own behalf; but during the past year the Government of India has generously assigned a further annual grant in order that a systematic search may be made for those classes of writings, and that valuable MSS. may be bought and preserved here in the same way as Sanskrit MSS. This business has been placed in the hands of the present Philological Secretary, Dr. Ross, and he has been prosecuting an active search with the aid of maulavis during the last five months. He has discovered a number of private libraries that were not known to us before; the works in them have been examined, and what has been already found offers sanguine expectations that the grant will enrich our collection with writings of the highest interest and value, especially for historical purposes. I may add that the recent expedition to Thibet has brought to light a quantity of Thibetan MSS.; these have been placed temporarily in the Imperial Library here and are available for study.

The Society has about 600 Jain manuscripts in its custody at present. These are not always easy to be obtained, because the Jains do not part with their writings readily. Mahāmahopādhyāya Haraprasād Sāstrī has however recently learnt of a valuable collection of such manuscripts, comprising nearly two thousand works or portions of works, and the owner, who is not a Jain, is willing to sell them. It is very desirable that they should be secured. An application has been made to the Government of India for special aid towards their purchase, and if they can be bought, the total collection of Jain manuscripts which will be in the Society's custody will be the finest in the world.

These collections demand that the fullest use should be made of them, and one of the first duties will be to compile descriptive catalogues of the Persian, Arabic and Jain manuscripts, as has been done for the Sanskrit manuscripts. In all this fresh work we must look more to our Indian members to prosecute the research necessary. Some use is made of these manuscripts by scholars in Europe, and by European scholars resident in this country; but the number of the latter is very small and will probably be fewer in the future. Members of the Government Services can only give of the leisure, which they can spare from their official duties, towards qualifying themselves in Oriental learning and studying Oriental works; and they are less able year by year to find leisure for such studies. Their official duties increase and become more exacting, and do not in any way conduce towards acquiring any thorough acquaintance with ancient learning. The two pursuits have been continually diverging more and more markedly. Moreover, to add to the hesitation that besets Oriental study here, the standard of Oriental attainments required rises with the additional knowledge that is continually accumulated by scholars in Europe. These and other reasons deter members of those Services from attempting original research in these fields, and there are very few, if any, inducements. The opportunities therefore are all the ampler for Indian students, and a career of distinction is open to them, if they will carry on their investigations according to the standard of European scholarship. This is, no doubt, not a simple qualification, yet it is essential; and those of them are fortunate who can receive some part of their training from European teachers. It is very much to be wished that more training of this kind should be available for them.

The scientific side of the Society's work, on the other hand, should increase in the future. The Scientific Departments of the Government have been strengthened. Among the members of those services there is no such disagreement between official duties and private pursuits; but the two blend and strengthen each other, and scientific research and professional success go hand in hand. For scientific investigation, therefore, there are the most encouraging inducements. Moreover, as private enterprise develops the resources of the country, Science will be applied to those objects in larger measure, and the number of workers in scientific fields should steadily increase. The Society must hope that it will receive the benefit of all such investigations in future, and that more scientific papers will be contributed to its Journal rather than communicated to the publications of the various Societies in England.

A matter that concerns us closely is the style in which our Proceedings and Journal are published. This is now under consideration. The present style is what was adopted many years ago, and the Council desire to improve and probably enlarge these publications and add more illustrations, so as to suit the requirements of the present day better. Efforts are also being made to issue our publications promptly, and the Council hope that members will contribute papers the more readily in that the Journal will then supply them with a greater quantity of matter of varied interest. These modifications should tend to increase the sale of our publications in Europe; and the Report mentions the change which has been made in the Society's agency in London to secure a readier, larger and more remunerative disposal. Our thanks are due to Mr. Macfarlane who arranged the new terms during his visit home on leave last year.

Steady progress has been made in the publication of the Bibliotheca Indica. Mr. Beveridge has finished his translation of the Akbarnāma; fresh work will be placed in his hands, and it is hoped arrangements may be made for additional works on the Persian and Arabic side, which has of late years rather given way to the Sanskrit side. This should be one of the first results of the systematic search that (as I have mentioned) is being made for Persian and Arabic manuscripts. Among Sanskrit writings the Society should, I think, pay more attention to various old works in future, which represent rather the general or popular side of literature. Archæological discoveries in ancient countries have shewn that the accounts handed down from ancient times are not as fictitious as was imagined formerly, but contain much substantial truth. This should be found true in India also. With regard to the Purāṇas, for instance, recent researches have indicated that they are more ancient than was conjectured a generation ago. Professor Wilson estimated their age as lying between the eighth and thirteenth centuries approximately, but it now seems that all of them were composed earlier, most of them before the seventh century, and some at least in the earliest centuries of the Christian era. Similarly the Tantras appear to be more ancient than was imagined, and a study of them will throw much needed light on a very wide and obscure though important subject, namely, on various phases of the popular forms of Hindu religion of modern times and of the present day. The Society might well turn part of its attention to these and other original compositions rather than towards editing commentaries, which are admittedly of comparatively modern origin.

Much attention has been given to the Society's house, and various repairs and improvements have been carried out. Through the generosity of the Government of India the munificent sum of Rs. 10,000 was granted for the further improvement of this building. Proposals and estimates have been drawn up and are now under consideration, and when the Council has decided how the funds at its disposal can be best utilized, the alterations will be undertaken and should be finished this year.

The valuable pictures which the Society possesses, either as its own or as Trustee of the Home Bequest, required renovation. They have been cleaned, re-stretched and varnished. Fresh frames were selected by the late President, the Hon. Mr. Bolton, in London, and have recently arrived. The pictures are now being placed in their new frames and will be re-hung, when the repairs to the building are completed, and re-arranged so as to show to better advantage. The expense has been great, but the renovation should suffice for many years.

The Report shows that the list of the Society's members has increased so as to stand now at a higher number than it has ever recorded in the past. This is of good augury for the future, and we trust that among the new members many will contribute not only their interest in the Society's business, but also the results of travels and inquiries. The inquiries that were open to members in the Society's early days were many and wide, and offered all the attraction and interest that newly-discovered fields possess, where all information is welcome; but the conditions of research have greatly altered now. In the settled Provinces of India, no doubt, the harvest of investigation has been freely reaped, and what more is to be gathered becomes rather the work of specialists and experts. The field of Indian investigation has been surveyed and described, and the work that remains is for those who can bring minds, unburdened with other demands and replete with knowledge, to the elucidation of the problems and difficulties that have arisen out of the general survey. Yet much valuable ethnological information still awaits the gathering among the ruder tribes, especially in the outlying Provinces. To members who have such opportunities the ethnological side of the Society's researches offers ample scope for investigation, and if they will make careful and systematic notes about those tribes and their languages, customs and religion, they can supply facts of real interest and value, as regards both the early conditions of such tribes and also the changes that are being worked among them by the influence of Hinduism.

I will conclude by mentioning some matters of interest which lie outside the Society, but in which members have taken or are taking a part.

A Buddhist Sanskrit Appendix was compiled to Rai Sarat Chandra Das' Thibetan Dictionary under the auspices of the Government, and the Government has recently placed it in the capable hands of M. de La Vallée Poussin in Belgium, in order that it may receive a finishing revision from a European scholar.

The Archæological Department of Government has published its first annual volume. It covers the whole ground of such research and sets out most interesting discoveries with a wealth of detailed information.

A book of great interest has lately been published by Mr. Vincent Smith on the early history of India from B.C. 600 to the Mohammedan conquest. It brings the latest discoveries to elucidate that long and most important period, and will be of signal service to students in this country. Prof. Thibaut has published in the series of Sacred Books of the East a translation of Rāmānuja's great work, the S'ribhāṣya, which is a commentary on the Vedānta Sūtras and is the standard book of the Vaiṣṇavas of South India. Dr. Grierson has published two more parts of his monumental work in the Linguistic Survey of India.

A Flora of the Panjab is now under compilation, and the duty has been entrusted by the Government to Mr. Drummond of the Civil Service.

The Imperial Academy of Sciences of Vienna wished to obtain a record of Sanskrit recitation and music for the study of ancient texts, and Dr. Exner, who is now in India, succeeded in obtaining the best results that are possible in Calcutta with the aid of a phonograph, as selected passages were recited by the best qualified paṇḍits.

The Bombay Branch of the Royal Asiatic Society has just celebrated its centenary, and the Council arranged that three of our members should attend and offer it our congratulations.

* * *

The President announced that the Scrutineers reported the result of the election of Officers and Members of Council to be as follows :—

President.

His Honor Sir A. H. L. Fraser, M.A., LL.D., K.C.S.I.

Vice-Presidents.

The Hon. Mr. Justice Asutosh Mukhopadhyaya, M.A., D.L., F.R.A.S., F.R.S.E.
T. H. Holland, Esq., F.G.S., F.R.S.
C. W. McMinn, Esq., I.C.S. (retired).

Secretary and Treasurer.

Honorary General Secretary :—J. Macfarlane, Esq.
Treasurer :—The Hon. Mr. Justice Asutosh Mukhopadhyaya, M.A., D.L., F.R.A.S., F.R.S.E.

Additional Secretaries.

Philological Secretary :—E. D. Ross, Esq., Ph.D.
Natural History Secretary :—Capt. L. Rogers, M.D., B.Sc., I.M.S.
Anthropological Secretary :—N. Annandale, Esq., B.A.
Joint Philological Secretary :—Mahamahopadhyaya Haraprasad Shastri, M.A.

Other Members of Council.

The Hon. Mr. Justice F. E. Pargiter, B.A., I.C.S.
Kumar Ramessur Maliah.
I. H. Burkill, Esq., M.A.
H. E. Kempthorne, Esq.
W. D. Dods, Esq.
The Hon. Mr. A. Earle, I.C.S.
Lt.-Col. J. H. Tull Walsh, I.M.S.
R. O. Lees, Esq.
H. H. Hayden, Esq., B.A., F.G.S.
E. Thornton, Esq., F.R.I.B.A.

The Meeting was then resolved into the Ordinary General Meeting.

HIS EXCELLENCY LORD CURZON, G.M.S.I., G.M.I.E., Patron, in the chair.

The minutes of the last meeting were read and confirmed.

Thirty-six presentations were announced.

Mr. J. De Grey Downing and Captain G. W. Megaw, I.M.S., were ballotted for and elected Ordinary Members.

It was announced that Mr. B. C. Sen and Rai Lakshisankar Misra Bahadur had expressed a wish to withdraw from the Society.

The President announced that Mr. P. R. Bramley, Babu Gopal Chandra Chatterjee and Mr. Mahammad Rafiq elected members of the Society on 3rd February, 1st June and 6th July 1904, respectively, not having paid their entrance fees, their election have become null and void under Rule 9, and that the election of Rev. S. Endle has been cancelled at his own request.

The General Secretary exhibited two photographs of the stone image of Buddha forwarded by the Commissioner of the Chittagong Division, and read the following note on it prepared by Pandit Satis Chandra Vidyabhusana :—

This image represents Buddha sitting on *Padmāsana* or lotus-seat which is defined as a particular posture in religious meditation in which the devotee sits with the thighs crossed, with one hand resting on the left thigh, the other held up with the thumb bent towards the heart, and the eyes directed towards the tip of the nose.

The image, which is a specimen of neither the Indo-Greek, Indo-Scythian or Dravidian sculpture, is the representation of an Arakanese Buddha which differs a little from the Buddhas of Burma proper. The image must have been prepared about the year 1560 A.D., when Chittagong was completely conquered by the Arakanese and was made a province of Arakan. Chittagong remained a province of Arakan up to 1666 A.D., when it was snatched away by the Mahomedans. The town was stormed and the Arakanese settlers driven out of Chittagong. After the annexation of Arakan by the King of Burma, a large number of fresh Arakanese Buddhists immigrated into Chittagong at the close of the 18th Century A.D. The Maghs that now live in Chittagong are the descendants of these last immigrants. They know nothing of this image and there is no local tradition about it. It was in fact prepared before their arrival in Chittagong, and before the storming of the city by the Mahomedans.

According to the Burmese legends, in the reign of King Thirimegha in the middle of the 14th Century A.D., a canine tooth of Buddha was brought to Tsitkain. If Tsitkain is identified with Chittagong (about which there is of course a grave doubt), then in some future time we may expect also to find in Chittagong the golden casket in which the precious tooth-relic was placed.

Pandit Satis Chandra Vidyabhusana exhibited images of five of the sixteen famous Buddhist Mahasthaviras recovered from Tibet.

MARCH, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 1st March, 1905, at 9-15 P.M.

C. W. McMinn, Esq., I.C.S. (retired,) Vice-President, in the chair.

The following members were present:—

Mr. N. Annandale, Mr. R. Burn, Babu Monmohan Chakravarti, Mr. B L Chauduri, Rai Sarat Chandra Das Bahadur, Mr. J. N. Das Gupta, Mr. D. Hooper, Dr. W. C. Hossack, Dr. H. H. Mann, Capt. J. H. D. Megaw, Captain L. Rogers, I.M.S., Pandit Yogesa Chandra Sastree, Babu Jogendra Nath Vidyabhusan, Pandit Satis Chandra Vidyabhushana, Mr. E. Vredenburg.

Visitors:—Mr. D. MacDonald, Mr. S. C. Sanial, Babu Brajendra Kumar Seal.

The minutes of the last Meeting were read and confirmed.

Eleven presentations were announced.

Rev. A. Willifer Young, Mr. W. B. Brown, Miss Cornelia Sorabjee, Babu Sasi Bhushan Bose, Mr. S. C. Sanial, and Babu Muralidhar Banerji, were ballotted for and elected Ordinary Members.

It was announced that Dr. A. E. Caddy had expressed a wish to withdraw from the Society.

The Chairman announced that a second Elliott gold medal had been awarded to Babu Surendra Nath Maitra, M.A., for his essay entitled "On the Experimental Determination of the Electro-chemical equivalent of Nickel," submitted in competition for the Elliott Prize for Scientific Research for 1904, under Rule G of notification in the *Calcutta Gazette* of the 28th December, 1892.

The General Secretary read the following report of the Sub-Committee appointed by Council to consider the style, paper and design of the Society's publications held on Wednesday, the 22nd February, 1905, at 8 A.M.

Resolved—

1. The Committee is of opinion that by the establishment of a quarto publication for the larger memoirs, the residue of small papers can be conveniently published in a single Journal styled the "Journal and Proceedings" of the Society issued on the lines of the Journal of the Royal Asiatic Society.

2. That the paper most appropriate for use in all the Society's publications is that employed for the Quarterly Journal of the Geological Society, in which photo-blocks can be printed with

fair clearness on a paper which is not inconveniently thick or smooth.

3. The Committee after seeing representatives of Messrs. Thacker, Spink & Co., and the Baptist Mission Press, recommend the following estimate submitted by the latter:—

Paper A.	Rs. 3-8	per page	for	8vo.
„ C.	„ 6-4	„	„	4to.

4. The Committee also recommend that the new paper and, as far as possible, the types should be employed for works hereafter to be published in the Bibliotheca Indica.

The question of improving the vernacular types used in this publication must be postponed, nothing better being available in India, but the Committee has reason to believe that improvements will shortly be effected.

5. The present Report is submitted to this Meeting of Council in order that if it is adopted the new arrangements may apply to the publications of 1905. The preparation of a design for the new printed cover is still under consideration, but can be easily completed before any new publications are issued.

6. The Committee were further of opinion that select advertisements should appear in "Journal and Proceedings," as in the J.R.A.S., and that the arrangements for this purpose should be entrusted to Messrs. Thacker, Spink & Co., whose representative informed the Committee that they were ready to undertake the work and that the income to be derived from this source would probably recoup the Society for a very large proportion of the cost of the "Journal and Proceedings." It is suggested that these advertisements besides being a source of income would be of considerable practical use to members.

7. To facilitate the system of publishing papers, and to avoid the delay often caused by reference to Council, in accordance with the standing regulations, the Committee recommend that all arrangements with regard to the publication of papers be made by a Standing Publication Committee, composed of the Editors of the Journal and Proceedings, and that this Committee be given the powers now resting with Council, except when the publication of a paper involves expenditure beyond the sanctioned grant. In such a case, the sanction of Council would be necessary before the printing of a paper. This change of regulation can be introduced, on resolution of the Council, by a single change in the wording of the standing regulations printed in pp. 25 and 26 of the Rules, &c. of the Society.

8. The Committee recommend the restoration of the old practice of publishing in the Proceedings from their minutes, the list of members at each Meeting of Council as well as extracts when they appear to be of general interest. Such extracts might be first read at the General Meeting following the Meeting of Council.

Order.—That the recommendation of the Committee relating to the following matters be accepted :—

(1) Publication of a quarto series (2) Publication of a new series (8vo) containing the Journal and Proceedings combined. (3) Paper and Type to be used. (4) Insertion of advertisements relating to books and scientific instruments. (5) Appointing Messrs. Thacker, Spink & Co. to secure advertisements. (6) Publication of such resolutions of the Council, as the Council may determine, in the Proceedings. Circulate proposal about the appointment of a Publication Committee and their powers.

Read the following extract from a programme from the Royal Academy of Sciences of Turin, announcing a prize :—

The Royal Academy of Sciences of Turin announce a prize, open to savants and inventors of all nations, to be given to that person who during the four years 1903-06 shall, in the opinion of the Academy, have made the most striking or useful discovery, or have produced the most celebrated work in physical and experimental science, natural history, pure and applied mathematics, chemistry, physiology, and pathology, including geology, history, geography and statistics. The value of the prize is 9,600 francs.

Anyone wishing to compete may apply, but the prize will be awarded to the most worthy, though he may not have applied.

The following papers were read :—

1. *Occurrence of the genus Apus in Balúchistán.—By* E. VREDENBURG, *Geological Survey of India.*

2. *Tibet under the Tartar Emperors of China.—By* RAI SARAT CHANDRA DAS BAHADUR, C.I.E.

This paper has been published in Journal Part I for 1904.

3. *Pavana-dutaṁ or Air-messenger, by Dhoyīka, a Court poet of Laksmanasena, King of Bengal, with an Appendix on the Sena Kings.—By* MONMOHAN CHAKRAVARTI, M.A., M.R.A.S.

4. *Earwigs of the Indian Museum.*—BY M. BURR. *Communicated by the Anthropological Secretary.*

This paper has been published in "Journal and Proceedings," N.S., Vol. I, No. 1.

5. *The Hydra of the Calcutta Tanks.—By* NELSON ANNANDALE, B.A.

6. *The composition of the oil from Bir Bahoti or the "Rains Insect" (Trombidium grandissimum).—By* E. G. HILL, B.A.

7. *Contributions to Oriental Herpetology II. Notes on the Lizards in the Indian Museum with descriptions of New Forms and Lists of species recorded from British India and Ceylon and of specimens collected in Sinkip Island (East Sumatra) by the late Professor Wood-Mason's Collector (Part I).—By* NELSON ANNANDALE, B.A.

8. *Customs in the Trans-border Territories of the North-West Frontier Province.—By* H. A. ROSE, I.C.S.

9. *The Agraharis of Sasaram.—By* L. S. S. O'MALLEY, I.C.S. *Communicated by the Anthropological Secretary.*

These papers have been published in Journal, Part III, for 1904.

10. *Contributions to the Kanawar folklore.—By* PANDIT TIKARAM JOSHI. *Communicated by* MR. H. A. ROSE.

11. *A review of the first volume of the Archæological Reports of the Government of Java. Illustrated by a collection of photographs belonging to the reader of the paper.—By* FATHER DAHLMANN, S.J. *Communicated by the Philological Secretary.*

APRIL, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 5th April, 1905, at 9-15 P.M.

His Honour SIR A. H. L. FRASER, M.A., LL.D., K.C.S.I., President, in the chair.

The following members were present:—

Mr. N. Annandale, Mr. R. P. Ashton, Major W. J. Buchanan, I.M.S., Major W. J. Bythell, I.A., Babu Monmohan Chakravarti, Mr. B. L. Chaudhuri, Rai Sarat Chandra Das Bahadur, Mr. Hari Nath De, Mr. L. L. Fermor, Rev. E. Francotte, S.J., Mr. N. L. Hallward, Mr. H. H. Hayden, Mr. D. Hooper, Dr. W. C. Hossack, Mr. J. Macfarlane, Mr. C. W. McMinn, Kumar Satindradeb Rai, Captain L. Rogers, I.M.S., Pandit Yogesa Chandra Sastree, Mahamahopadhyaya Haraprasad Shastri, Mr. H. E. Stapleton, Pandit Satis Chandra Vidyabhusana.

Visitors:—Mr. A. J. F. Blair, Mr. S. H. Browne, Mr. A. G. Fraser, Mr. E. H. Pascoe, Kumar Kshitendradeb Rai Mahasai, Kumar Manindradeb Rai Mahasai.

The minutes of the last meeting were read and confirmed.

Eighty-three presentations were announced.

Mr. J. M. Dunnett was ballotted for and elected an Ordinary Member of the Society.

It was announced that Lt.-Col. H. T. S. Ramsden, I.A., had expressed a wish to withdraw from the Society.

The General Secretary read the names of the following gentlemen who had been appointed to serve on the various Committees for the present year:—

Finance and Visiting Committee—

Mr. N. Annandale.
Mr. W. K. Dods.
The Hon. Mr. A. Earle.
Mr. T. H. Holland.
Mr. H. E. Kempthorne.
The Hon. Mr. Justice Asutosh Mukhopadhyaya.
Captain L. Rogers.
Dr. E. D. Ross.
Mahamahopadhyaya Haraprasad Shastri.

Library Committee—

Mr. Harinath De,
Mr. H. H. Hayden.

Mr. T. H. D. LaTouche.
Mr. C. W. McMinn.
The Hon. Mr. Justice Asutosh Mukhopadhyaya.
Dr. E. D. Ross.
Mahamahopadhyaya Haraprasad Shastri.
Mr. E. Thornton.

Philological Committee—

Babu Muralidhar Banerjee.
Babu Monmohan Chakravarti.
Mr. Harinath De.
Mr. E. A. Gait.
The Hon. Mr. Justice Asutosh Mukhopadhyaya.
The Hon. Mr. Justice F. E. Pargiter.
Dr. E. D. Ross.
Pandit Satyavrata Samasrami.
Pandit Yogesa Chandra Sastree.
Mahamahopadhyaya Haraprasad Shastri.
Mahamahopadhyaya Chandra Kanta Tarkalankara.
Dr. G. Thibaut.
Babu Nagendra Nath Vasu.
Mr. A. Venis.
Pandit Satis Chandra Vidyabhusana.

The proposed revision in Rules 5 and 7 of the Society's Rules, of which intimation had been given by circular to all resident members in accordance with Rule 64A, were brought up for discussion.

Mr. D. Hooper exhibited some peculiar knives from Nepal and Coorg.

The following papers were read :—

1. *Aniruddha Thera.—A learned Pāli author of Southern India in the 12th Century A.D.—By* PANDIT SATIS CHANDRA VIDYĀBHŪṢAṆA.

2. *The Colouring Principle of the flowers of Nyctanthes Arbor-tristis.—By* E. G. HILL, B.A.

3. *On some Forms of the Krīs hilt, with special reference to the Krīs tādjōng of the Siamese Malay States. With exhibition of specimens and drawings.—By* N. ANNANDALE, B.A.

This paper will be published in the Memoirs.

4. *The Monasteries of Tibet.—By* RAI SARAT CHANDRA DAS BAHADUR, C.I.E.

5. *On the occurrence of the Fresh-water Worm Chætogaster in India, with notes on the habits of a species from Calcutta.—By* N. ANNANDALE, B.A.

6. *A letter from Mr. H. Beveridge to Babu Girindra Nath Dutt on his paper on the History of the Hutwa Raj.*

I am much obliged to you for the present of your History of the Hutwa Raj. I have read it with interest. The only point on which I am capable of commenting is that relating to the time of Akbar and his father. At page 4 you speak of the last of the Lodi kings falling into the hands of Baber, the exact fact being that he was killed in battle, and the battle of "Baksar" a little lower down is a slip for the battle of Chausa (on the other side of the Ganges). Your note at pages 48 and 49 on the Hutwa Raj in the Ain Akbari should rather be the Hutwa Raj in the Ain and the Akbarnama, for the chief references to Kalyanpore and its Zemindar are in the Akbarnama. Blochmann's notes to which you refer are derived from the Akbarnama, not from the Ain. Kalyanpore is twice mentioned in the Akbarnama vol. III. One reference is at page 370 which is that mentioned by you, though I do not think the original Persian quite warrants the statement that the imperialists drove Masum K. Faroukhudi over Kalyanpore to Mahamedabad. The other reference is not mentioned by Blochmann, but is the more important of the two, for there Abul Fazl refers to Saran and the Zemindar of Kalyanpore.[1] It occurs at page 397, Vol. III, of the Bib. Ind. ed. of the Akbarnama, line three from top. After mentioning the borders of Saran on the preceding page (396) it says that a rebel named Nur Mahammed tried to take refuge with "the Zemindar of Kalyanpore" and did not succeed. This reference is in the 28th year of Akbar's reign corresponding to 1582 or 1583 and so you will see that your date of 1600 for Raja Kalyan Mall is too late by about 20 years. The Koda[2] or Konah mentioned in Jarrett II, 156, just before Kalyanpore is perhaps the Kuadi of your page 5. By the by, Masum K. Faroukhudi was afterwards secretly murdered by Akbar's orders.

7. *Festivals, Customs and Folklore of Gilgit.—By* Munshi Ghulam Mahomad. *Communicated by the Anthropological Secretary.*

This paper will be published in the Memoirs.

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[1] "I am indebted to the Asiatic Society's resident Moulvi for the following information from the Akbarnamah:—

"Noor Muhammad, the out-law. When Khani Azam Mirza Kook took post and reached the boundaries of Jaunpore, he received information that that out-law (Noor Muhammad) came from Bengal by the way of Tirhoot and made friendship with Khaja Abdul Gafoor Nagshbandi and disturbed the peace of the country and began to ravage the district of Saran, having settled at a distance of 24 miles from Tirhoot. Meanwhile the royal troops arrived at the bank of the Ganges and attempted to construct a bridge over it. Understanding this the enemy tried to take shelter under the zamindar of Kalyanpur but in vain. He was arrested at Chelaran (Champaran)."

[2] There is no doubt that "Koḍah (Gawa ?)" of Jarrett is Kuaḍi. Most of the names of the Pergs. in Saran mentioned by Abul Fazl have been misread by Jarrett. As for their correct reading cf. my notes on the Vernacular dialects of Saran in the Journal, of the Asiatic Society of Bengal, Part I, No. 3, of 1897, pp. 194-195.

G. N. Dutt.

MAY, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 3rd May, 1905, at 9-15 P.M.

PANDIT SATIS CHANDRA VIDYABHUṢAṆA, M.A., in the chair.

The following members were present:—

Dr. N. Annandale, Rai Sarat Chandra Das, Bahadur, Mr. L. L. Fermor, Mr. J. Macfarlane, Mr. F. C. Turner, Mr. E. Vredenburg.

ERRATA ET CORRIGENDA.

Dr. Annandale's paper, *Journal and Proceedings*, Vol. I., No. 5, May, 1905.

Page,	142,	line,	31,	*for* frontsnasal, *read* frontonasal.
,,	147,	,,	23,	*for* has supraoculars, *read* has 5 supraoculars.
,,	151,	,,	16,	*for* Mr. Grey Pilgrim, *read* Mr. Guy Pilgrim.
,,	151,	,,	33,	Mr. Pilgrim's specimens of *Eremias brevirostris* come from Bahreyn Island, Persian Gulf, the *Varanus* and *Uromastix* from Oman.

ANNANDALE, B.A., D.Sc.

3. *Tibet, a dependency of Mongolia* (1643-1716 A.D.)—*By* RAI SARAT CHANDRA DAS, BAHADUR, C.I.E.

4. SARVAJÑA-MITRA—*A Tantrika Buddhist author of Kāśmīra in the 8th Century A.D.*—*By* PANDIT SATIS CHANDRA VIDYABHUṢAṆA, M.A.

5. *The Similarity of the Tibetan Alphabet to the Kashgar Brahmi Alphabet.*—*By* REV. A. H. FRANCKE.

6. *A complete All-word Index to the Inscriptions of Asoka.*—*By* GANGA MOHAN LASKAR, M.A. *Communicated by the Philological Secretary.*

The last two papers will be published in the Memoirs.

MAY, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 3rd May, 1905, at 9-15 P.M.

PANDIT SATIS CHANDRA VIDYABHUṢAṆA, M.A., in the chair.

The following members were present :—

Dr. N. Annandale, Rai Sarat Chandra Das, Bahadur, Mr. L. L. Fermor, Mr. J. Macfarlane, Mr. F. C. Turner, Mr. E. Vredenburg.

Visitor :—Mr. G. de P. Colter.

The minutes of the last Meeting were read and confirmed.

Thirty-six presentations were announced.

Babu Kashi Prasad Saha, Babu Hemendra Prasad Ghosha, Dr. A. J. Ollenbach, Mr. H. G. Graves, Babu Dwarkanath Chakrabutti and Mr. T. W. Richardson were balloted for and elected Ordinary Members of the Society.

It was announced that Mr. A. Tocher had expressed a wish to withdraw from the Society.

The Chairman announced that Mr. H. E. Stapleton, Captain L. Rogers, I.M.S., Mr. H. H. Mann, Mr. D. Hooper and Mr. J. N. Das Gupta had been appointed to serve on the Library Committee during the present year.

The following papers were read :—

1. *The Emperor Bābar.—By* H. BEVERIDGE, I.C.S. (retired.)

2. *Contributions to Oriental Herpetology III—Notes on the Oriental Lizards in the Indian Museum, with a List of the Species recorded from British India and Ceylon. Part 2.—By* NELSON ANNANDALE, B.A., D.SC.

3. *Tibet, a dependency of Mongolia* (1643-1716 A.D.)—*By* RAI SARAT CHANDRA DAS, BAHADUR, C.I.E.

4. SARVAJÑA-MITRA—*A Tantrika Buddhist author of Kāśmīra in the 8th Century A.D.—By* PANDIT SATIS CHANDRA VIDYABHUṢAṆA, M.A.

5. *The Similarity of the Tibetan Alphabet to the Kashgar Brahmi Alphabet.—By* REV. A. H. FRANCKE.

6. *A complete All-word Index to the Inscriptions of Asoka.—By* GANGA MOHAN LASKAR, M.A. *Communicated by the Philological Secretary.*

The last two papers will be published in the Memoirs.

7. *Materials for a Flora of the Malayan Peninsula, No. 16.*—By SIR GEORGE KING, K.C.I.E., LL.D., F.R.S., *late Superintendent of the Royal Botanic Garden, Calcutta, and* J. SYKES GAMBLE, C.I.E., M.A., F.R.S., *late of the Indian Forest Department.*

(Abstract.)

The present contribution to these materials contains the account of the genus *Psychotria* required to conclude the joint-account by the authors of the natural order *Rubiaceæ*, commenced in part 14 and continued in part 15 of this series. This account of *Psychotria* comprises descriptions of 26 completely represented and 3 imperfectly known species; of these the following 11 species,—*Psychotria Kunstleri* King & Gamble, *P. Scortechinii* King & Gamble, *P. pilulifera* King & Gamble, *P. Ridleyi* King & Gamble, *P. multicapitata* King & Gamble, *P. Birchiana* King & Gamble, *P. fulvoidea* King & Gamble, *P. Curtisii* King & Gamble, *P. Wrayi* King & Gamble, *P. inæqualis* King & Gamble, and *P. condensa* King & Gamble, are new to science.

In addition, this fasciculus contains accounts, for which the authors are jointly responsible, of the three following natural orders: *Campanulaceæ*, 4 genera and 6 species, two of the species—*Pentaphragma Scortechinii* King & Gamble and *P. Ridleyi* King & Gamble,—being new; *Vacciniaceæ*, 3 genera and 12 species, 5 of the species—*Pentapterygium Scortechinii* King & Gamble, and *Vaccinium Scortechinii* King & Gamble, *V. glabrescens* King & Gamble, *V. viscifolium* King & Gamble and *V. Kunstleri* King & Gamble,—being new; and *Ericaceæ*, 5 genera and 17 species, 1 genus—*Pernettyopsis* King & Gamble,—and 7 species—*Diplycosia erythrina* King & Gamble, *Rhododendron Wrayi* King & Gamble, *R. pauciflorum* King & Gamble, *R. perakense* King & Gamble and *R. dubium* King & Gamble, with *Pernettyopsis malayana* King & Gamble, and *P. subglabra* King & Gamble—being new to science.

Two orders; *Valerianaceæ*, 1 genus and 1 species; also *Compositæ*, 23 genera and 31 species, have been described by Sir G. King: four others; *Stylideæ*, 1 genus and 1 species; *Goodenovieæ*, 1 genus and 1 species; *Epacrideæ*, 1 genus and 1 species; and *Plumbagineæ*, 2 genera and 2 species, have been described by Mr. Gamble. These six orders contain no novelties.

In addition to the foregoing, an account of the order *Monotropeæ*, 1 genus and species, has been provided by Lieut.-Col. D. Prain, Superintendent of the Royal Botanic Garden, Calcutta; while Mr. C. B. Clarke, F.R.S., formerly President of the Linnean Society, has prepared an account of the natural order *Gentianaceæ*, 6 genera and 8 species, 1 genus—*Microphium* C. B. Clarke,—and 3 species,—*Microphium pubescens* Clarke, *Cancora pentanthera* Clarke, and *Villarsia aurantiaca* Ridley—being new to science.

This paper will be issued as an extra number of the Society's *Journal*, Vol. LXXIII, Part II., 1904.

JUNE, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 7th June, 1905, at 9-15 P.M.

The Rev. E. Francotte, S.J., in the chair.

The following members were present :—

Dr. N. Annandale, Babu Dwarkanath Chakravarti, Mr. L. L. Fermor, Mr. D. Hooper, Dr. W. C. Hossack, Mr. J. Macfarlane, Mr. H. H. Mann, Major D. C. Phillott, I.A., Mr. R. R. Simpson, Mr. H. E. Stapleton, Pandit Satis Chandra Vidyabhuṣaṇa, and Mr. E. Vredenburg.

Visitors :—The Rev. L. Delaunoit, S.J., Mr. J. M. Maclaren and Mr. E. Vieux.

The minutes of the last meeting were read and confirmed.

Twenty-five presentations were announced.

Pandit Nava Kanta Kavibhushan was ballotted for and elected an Ordinary Member of the Society.

It was announced that the Hon. Mr. Justice J. G. Woodroffe, Mr. C. R. Marriott, and Captain Stuart Godfrey, I.A., had expressed a wish to withdraw from the Society.

The General Secretary reported the death of Mr. H. W. Peal, an Ordinary Member of the Society.

The proposed revision in Rules 5 and 7 of the Society's Rules, of which intimation had already been given by circular to all members, was brought up for final disposal. The votes of the members were laid on the table and the Chairman requested any Resident Members who had not expressed their opinion, to take the present opportunity of filling in voting papers. Five such papers were filled in, and with the 106 returned by members, were scrutinized, the Chairman appointing Messrs. H. E. Stapleton and L. L. Fermor to be Scrutineers. The Scrutineers reported as follows :—

For	104
Against	7

RULE 5.

PRESENT RULE.	PROPOSED RULE.
Mode of Election of Ordinary Members. Candidates for Ordinary Membership shall be proposed by one, and seconded by another, Ordinary Member. The name of the candidate, his proposer and seconder, shall be laid before a Meeting of the Council, and shall be read at the two Ordinary General Meetings of the Society which next succeed such Meeting of the Council, and during the interval shall be suspended in the Society's Meeting-room. The candidate shall be ballotted for at the *second* of such Ordinary General Meetings.	**Mode of Election of Ordinary Members.** Candidates for Ordinary Membership shall be proposed by one, and seconded by another, Ordinary Member. The name of the candidate, his proposer and seconder, shall be laid before a Meeting of the Council, and if approved, shall be recommended for election by ballot at the next Ordinary General Meeting of the Society. The names of candidates recommended by the Council for election shall be communicated to the Resident Members of the Society, with the usual notice of the General Meeting, and in case any five Ordinary Members consider it desirable, they will be at liberty to demand that the candidates' certificates be suspended in the Society's Meeting-room until the next following General Meeting, when the candidate shall be ballotted for. Any such demand for a postponement of election made under this rule must be made in writing, signed by at least five Ordinary Members, and presented at the Ordinary General Meeting before the proposed election takes place.

RULE 7.

PRESENT RULE.	PROPOSED RULE.
Council empowered to elect Ordinary Members during the Recess. Should there be no meeting during the Recess months of September and October, the Council shall be empowered to elect candidates for ordinary	**Council empowered to elect Ordinary Members during the Recess.** Should there be no meeting during the Recess months of September and October, the Council shall be empowered to elect candidates for Ordinary

Membership, who shall have been duly proposed and seconded at the General Meeting of the Society in August, or whose names may be received as candidates during the Recess. Such candidates shall be ballotted for at the Meeting of the Council next succeeding that at which their names and those of their proposers and seconders shall have been laid before the Council, and during the interval between the two meetings these names shall be suspended in the Society's Meeting-room, as provided in Rule 5; and it shall be necessary for the due election of such candidates that not less than two-thirds of the Members of Council present at the meeting shall vote in their favour. Such elections shall be reported and confirmed at the first General Meeting of the Society after the Recess.

Membership whose names may be received as candidates during the Recess. Such candidates shall be ballotted for at the Meeting of the Council next succeeding that at which their names and those of their proposers and seconders shall have been laid before the Council; and during the interval between the two meetings these names shall be suspended in the Society's Meeting-room. It shall be necessary for the due election of such candidates that not less than two-thirds of the Members of Council present at the meeting shall vote in their favour. Such elections shall be reported and confirmed at the first General Meeting of the Society after the Recess.

The following papers were read :—

1. *An Analysis of the Laṅkāvatāra Sūtra.—By* PROF. SATIS CHANDRA VIDYĀBHŪṢAṆA, M.A.

2. *Note on a Rock Shrine in Lower Siam.—By* N. ANNANDALE, B.A., D.SC.

The paper will be published in the Memoirs.

3. *Religion and Customs of the Uraons or Oraons.—By* REV. FATHER DEHON, S.J. *Communicated by* MR. E. A. GAIT, I.C.S.

The paper will be published in the Memoirs.

4. *Tibet under her Last Kings* (1434-1642 *A.D.*).—*By* RAI SARAT CHANDRA DAS, BAHADUR, C.I.E.

5. *Note on a Decomposition Product of a Peculiar Variety of Bundelkhand Gneiss.—By* C. A. SILBERRAD, B.A., B.SC., I.C.S.

JULY, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 5th July, 1905, at 9-15 P.M.

HIS HONOUR SIR A. H. L. FRASER, M.A., LL.D., K.C.S.I., President, in the Chair.

The following members were present:—

Dr. N. Annandale, Rai Sarat Chandra Das, Bahadur, C.I.E., Mr. L. L. Fermor, Mr. D. Hooper, Mr K. N. Knox, Mr. J. Macfarlane, Dr. M. M. Masoom, Major F. P. Maynard, I.M.S., The Hon. Mr. A. Pedler, Major D. C. Phillott, I.A., Captain L. Rogers, I.M.S., Mr. S. C. Sanial, Mahamahopadhyaya Haraprasad Shastri, Mr. R. R. Simpson, Mr. G. H. Tipper, Pandit Satis Chandra Vidyābhūṣaṇa, Mr. E. Vredenburg, The Rev. A. W. Young.

Visitors:—Mr. Hallowes, Capt W. B. Rennie, I.A.

The minutes of the last meeting were read and confirmed.

Forty presentations were announced.

It was announced that Mr. L. Morshead had expressed a wish to withdraw from the Society.

The General Secretary reported the death of Raja Jayakrishna Das, Bahadur, an Ordinary Member, and Dr. W. T. Blanford, F.R.S., an Honorary Member of the Society.

Read abstracts from programmes from the following Congresses and Exhibition:—

1. From Congrès International d'Expansion Economique Mondiale, 1905.

An International Congress of World-wide Economic Expansion (Congrès International d'Expansion Économique Mondiale) is to be held under the auspices of the Government of Belgium at Mons in September next (1) subscribe, (2) draw up a report, (3) send a delegate. The organisers suggest that the Society would be particularly interested in the section which relates to the following question:—

Which are the best ways of booking observations in uncivilised regions in order to obtain scientific notions on the native, social life, and manners and customs, and raise them to a higher civilization?

2. From Congrès International pour l'étude de la radiologie et de l'ionisation, Liege, 1905.

An International Congress for the Study of Radiology and Ionisation is to be held under the auspices of the Government of

Belgium at Liége in September next, in which the Society is invited to participate.

3. From Indian Industrial and Agricultural Exhibition, Benares, 1905.

A prospectus has been received of the Indian Industrial and Agricultural Exhibition to be held at Benares in connection with the next Indian National Congress.

The President presented the Elliott gold medals and Rs. 75 in cash to each of the following gentlemen for their essays submitted in competition for the Elliott Prize for Scientific Research during 1904:—

1. Babu Sarasi Lal Sarkar—for his essay entitled "On the crystalline properties of a potassium copper ferro cyanide compound," Parts I & II.
2. Babu Surendra Nath Maitra—for his essay entitled "On the Experimental Determination of the Electro-chemical equivalent of nickel." (With Diagrams.)

The President announced:—

1. That the Council had appointed Pandit Satis Chandra Vidyābhūṣaṇa as a member of the Council.
2. That Dr. Annandale had been appointed to serve on the Library Committee and Major D. C. Phillott, I.A., had been re-elected a member of the Philological Commitee during the year.

The General Secretary reported the presentation of nine gold and three silver coins from the Bombay Branch of the Royal Asiatic Society forwarded with their letter dated 15th June, 1905.

Mr. J. N. Das, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Pandit Yogesa Chandra Sastree; Mr. Edgar de Montford Humphries, I.C.S., proposed by Mr. R. Burn, seconded by Mr. J. Macfarlane; Babu Amulyacharan Ghose Vidyabhushan, proposed by Pandit Satis Chandra Vidyābhūṣaṇa, seconded by Mr. J. Macfarlane; Mr. Hem Chandra Goswami, proposed by Pandit Yogesa Chandra Sastree, seconded by Mr J. Macfarlane; Mr. J. A. Cunningham, B.A., proposed by Mr. F. Turner, seconded by Mr. G. W. Küchler; Mr. Jain Vaidya, proposed by Pandit Satis Chandra Vidyābhūṣaṇa, seconded by Mr. J. Macfarlane; Pandit Rajendra Nath Vidyabhusan, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Babu Muralidhar Banerjee; Babu Vanamali Chakravarti, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Babu Muralidhar Banerjee; and Pandit Pramatha Nath Tarkabhushan, proposed by Babu Muralidhar Banerjee, seconded by Mahamahopadhyaya Haraprasad Shastri, were ballotted for and elected Ordinary Members.

The Philological Secretary exhibited a Tibetan Scroll forwarded by the Hon'ble Sir A. T. Arundel, and Pandit Satis Chandra Vidyābhūṣaṇa read a note on it.

The note will be published in the *Memoirs*.

The following papers were read :—

1. *The Catholic Mission in Nepal and the Nepalese Authorities (18th century).—By* FATHER FELIX. *Communicated by the Philological Secretary.*

The paper will not be published by the Society.

2. *Four new Barnacles from the neighbourhood of Java, with Records of Indian Pedunculate Forms.—By* N. ANNANDALE, B.A., D.Sc., *Deputy Superintendent, Indian Museum.*

The paper will be published in the *Memoirs.*

3. *Additions to the collection of Oriental Snakes in the Indian Museum, Part II.—Specimens from the Andamans and Nicobars.—By* N. ANNANDALE, B.A., D.Sc., *Deputy Superintendent, Indian Museum.*

4. *The Tibetan Version of the Pramanasamuccaya—the First Indian work on Logic proper—brought from Tibet by the late Tibet Mission.—By* SATIS CHANDRA VIDYĀBHŪṢAṆA, M.A.

The paper will be published in the *Journal and Proceedings* for August, 1905.

5. *Materials for a Flora of the Malayan Peninsula*, No. 17.—*By* SIR GEORGE KING, K.C.I.E., LL.D., F.R.S., *late Superintendent of the Royal Botanic Garden, Calcutta, and* J. S. GAMBLE, C.I.E., F.R.S., *late of the Indian Forest Department.*

(Abstract.)

This contribution commences with Natural Order *Myrsineæ* and is continued by *Sapotaceæ, Ebenaceæ, Styraceæ* and *Oleaceæ.* The draft of *Ebenaceæ* was prepared by Sir George King, that of the other Orders by Mr. J. S. Gamble ; but the new species are given under their joint names.

In the Natural Order *Myrsineæ* 7 genera are described with 80 species, of which the large genus *Ardisia* furnishes 47. The new species are 36 in number, viz., *Mæsa impressinervis* and *pahangiana ; Myrsine perakensis* and *Wrayi ; Embelia Scortechinii, angulosa, Ridleyi,* and *macrocarpa ; Labisia paucifolia* and *longistyla ; Ardisia chrysophyllifolia, solanoides, fulva, lankawiensis, labisiæfolia, montana, sinuata, platyclada, Kunstleri, Scortechinii, oblongifolia, tetrasepala, biflora, tahanica, Wrayi, minor, perakensis, Meziana, Ridleyi, rosea, longipedunculata, Maingayi, theæfolia,* and *bambusetorum ;* and *Antistrophe caudata* and *Curtisii.* A Tenasserim novelty has also been described *Embelia Gallatlyi.* The working out of the Malay plants of this difficult Order has been rendered easier owing to the recent Monograph of the Order by Herr Carl Mez, in Engler's *Pflanzenreich.*

In the interesting and important Natural Order *Sapotaceæ* there are 8 genera with 49 species, of which 25 are new, viz., *Sideroxylon Derryanum ; Isonandra perakensis* and *rufa ; Payena longepedicellata* (Brace), *Havilandi, sessilis, obtusifolia* and *selangorica ; Bassia aristulata, Kingiana* (Brace), *Kunstleri* (Brace), *penicellata, Curtisii, laurifolia, rupicola, perakensis, Braceana, longistyla, cuprea, penangiana,* and *erythrophylla ; Palaquium Ridleyi,* *microphyllum*, *Herveyi* and *stellatum*. An Andaman Islands species has also been included, *Mimusops andamanensis*. Some of the species, it will be noticed, bear the name given in the Calcutta Herbarium by Mr. L. R. Brace, formerly Curator; but he merely gave names without descriptions.

In the almost equally important Natural Order *Ebenaceæ* there are two genera with 42 species, of which 24 are new, viz., *Maba Hierniana*, *venosa*, *olivacea*, *Clarkeana* and *perakensis*; *Diospyros Wrayi*, *sub-rhomboidea*, *dumosa*, *Scortechinii*, *Styraciformis*, *tristis*, *pauciflora*, *ellipsoidea*, *Wallichii*, *toposioides*, *brachiata*, *Kunstleri*, *nutans*, *reflexa*, *penangiana*, *rufa*, *areolata*, *Curtisii*, and *glomerulata*.

The Natural Order *Styraceæ* gives two genera and 28 species, of which 25 belong to *Symplocos*. The new species are 8 in number, viz., *Symplocos fulvosa*, *pulverulenta*, *monticola*, *Ridleyi*, *perakensis*, *Brandiana*, *penangiana*, *Scortechinii*. As was the case with *Myrsineæ*, so in *Styraceæ* also, the work has been facilitated by the recently published Monograph by Herr Brand in Engler's *Pflanzenreich*.

In the Natural Order *Oleaceæ* there are 5 genera with 22 species, of which 9 are new. These are: *Jasminum Wrayi*, *Curtisii*, *longipetalum* and *Scortechinii*: *Osmantum Scortechinii*; *Linociera paludosa* and *caudata*; and *Olea platycarpa* and *ardisioides*.

In this part, therefore, are described 5 Natural Orders with 24 genera and 221 species. The number of species new to science are 115, and two new species have been also described from regions adjacent to that to which the work refers.

The paper will be published in full as an Extra Number of the *Journal and Proceedings*.

AUGUST, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 2nd August, 1905, at 9-15 P.M.

The REV. E. FRANCOTTE, S.J., in the chair.

The following members were present:—

Mr. J. Bathgate, Mr. L. L. Fermor, Babu Amulyacharan Ghosh Vidyabhushan, Mr. H. G. Graves, Mr. T. H. Holland, Mr. D. Hooper, Pandit Navakanta Kavibhushana, Mr. J. Macfarlane, Mr. H. H. Mann, Dr. M. M. Masoom, Major F. P. Maynard, I.M.S., Mr. G. E. Pilgrim, Captain L. Rogers, I.M.S., Dr. E. D. Ross, Pandit Yogesa Chandra Sastree, Mahamahopadhyaya Haraprasad Shastri, Mr. R. R. Simpson, Mr. H. E. Stapleton, Pandit Pramatha Nath Tarkabhushan, Mr. G. H. Tipper, Pandit Vanamali Vedanta Tirtha, Pandit Jogendra Nath Vidyabhushan, Pandit Rajendra Nath Vidyabhushan, Pandit Satis Chandra Vidyabhushan, the Rev. A. W. Young.

Visitors:—Babu Sarat Kumar Das, Mr. W. R. LeQuesne.

The minutes of the last meeting were read and confirmed.

Fifty presentations were announced.

It was announced that Major E. H. Brown, I.M.S., had expressed a wish to withdraw from the Society.

The Chairman announced that Mr. H. E. Stapleton had been appointed to officiate as Anthropological Secretary of the Society during the absence of Dr. N. Annandale.

The Chairman also announced that the following gentlemen being largely in arrears of subscription had been declared defaulters and that their names would be posted up in accordance with Rule 38.

Mr. R. G. Black.
Babu Ramani Mohan Mallick.
Babu Jaladhi Ch. Mukerjee.

With reference to the resolution of the Council regarding the rejection of certain books from the Society's library published in the Society's Proceedings for June, 1904, the Chairman announced that the Council had resolved that the Library Committee should settle the prices of books with authority to offer Government publications to Government.

The Chairman presented to Rai Sarat Chandra Dass, Bahadur, C.I.E., a diploma from the Imperial Russian Archæological Society electing him a Foreign Corresponding Member.

Sri Kripamaya Dev Anang Bhim Kesori Gajapati Maharaja, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by

Mr. J. Macfarlane; Lieut.-Col. C. P. Lukis, M.B., F.R.C.S., I.M.S. proposed by Captain L. Rogers, I.M.S., seconded by Captain J. W. Megaw, I.M.S.; Captain D. McCay, M.B., I.M.S., proposed by Captain L. Rogers, I.M.S., seconded by Captain J. W. Megaw, I.M.S.; Lieut. C. A. Gourlay, M.B., I.M.S., proposed by Captain L. Rogers, I.M.S., seconded by Captain, J. W. Megaw, I.M.S.; Captain J. J. Urwin, M.B., I.M.S., proposed by Captain L. Rogers, I.M.S., seconded by Captain J. W. Megaw, I.M.S.; Captain W. W. Clemesha, M.B., I.M.S., proposed by Captain L. Rogers, I.M.S., seconded by Captain J. W. Megaw, I.M.S.; were ballotted for and elected Ordinary Members.

Owing to non-receipt of the MS. of the paper entitled "The Tibetan version of the Pramāṇasamuccaya," by Prof. Satis Chandra Vidyābhūsaṇa, read at the July General Meeting, the paper is not published in the *Journal* and *Proceedings* for August 1905.

The following papers were read:—

1. *A Tibetan Chart containing the charm of Vajrabhairava.—By* Prof. Satis Chandra Vidyabhushan, M.A.

The paper will be published in the Memoirs.

2. *History of Nyāyaśāstra from Japanese sources.—By* Mahamahopadhyaya Haraprasad Shastri, M.A.

3. *Notes concerning the people of Mungeli Tehsil, Bilaspore District.—By* Rev. E. M. Gordon. *Communicated by the Anthropological Secretary.*

4. *Amulets as Agents in the Prevention of Disease in Bengal.—Communicated by* Mr. A. N. Moberly, I.C.S., *Superintendent of Ethnography, Bengal.*

The paper will be published in the Memoirs.

5. *A Short History of the house of Phagmodu, which ruled over Tibet on the decline of Sakya for upwards of a century till 1432, A.D.—By* Rai Sarat Chandra Das, Bahadur, C.I.E.

6. *Additions to the Collection of Oriental Snakes in the Indian Museum. Part 3.—By* N. Annandale, B.A., D.Sc.

7. *The Kantabudiyas of Cuttack.—By* Jamini Mohan Das. *Communicated by the Anthropological Secretary.*

8. *The Age of Jimuta Vahana.—By* Pandit Pramatha Nath Tarkabhushan.

The paper will be published in the Bibliotheca Indica.

9. *Sal-Ammoniac: a Study in Primitive Chemistry.—By* H. E. Stapleton, B.A., B.Sc.

The paper will be published in the *Memoirs.*

10. *Alchemical Equipment in the Eleventh Century, A.D.—By* H. E. Stapleton *and* R. F. Azo.

The paper will be published in the *Memoirs.*

11. *Note on the Bhotias of Almora and British Garhwal.—By* C. A. Sherring, M.A., I.C.S. *Communicated by* Mr. R. Burn, I.C.S.

The paper will be published in the *Memoirs.*

NOVEMBER, 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 1st November 1905, at 9-15 P.M.

The Hon. MR JUSTICE ASUTOSH MUKHAPADHYAYA, M.A., D.L., F.R.S E., Vice-President, in the chair.

The following members were present :—

Dr. N Annandale, Mr. I. H. Burkill, Babu Manmohan Chakravarti, Mr. B. L. Chaudhuri, Mr. L. L. Fermor, The Rev. E. Francotte, S.J., Mr. H. G. Graves, Mr. D. Hooper, Mr. T. H. D. La Touche, Mr. J. Macfarlane, Major D. C. Phillott, I.A., Mr. G. E. Pilgrim, Major L. Rogers, I.M.S., Mahamahapadhyaya Haraprasad Shastri, Mr. R. R. Simpson, Pandit Pramatha Nath Tarkabhushan, Pandit Vanamali Vedantatirtha, Pandit Rajendra Nath Vidyābhūṣaṇa Pandit Satis Chandra Vidyābhūṣaṇa.

Visitor :—Mr. G. de P. Cotter.

The minutes of the last meeting were read and confirmed.

One hundred and sixty-eight presentations were announced.

The Chairman announced :—

1. That the Council had appointed Mr. H. E. Stapleton as a member of the Council in the place of Mr. R. O. Lees, resigned.

2. That Dr. N. Annandale having returned to Calcutta had taken over charge of the duties of Anthropological Secretary from Mr. Stapleton.

3. That Mr. L. L. Fermor had been elected to serve on the Library Committee during the year.

The Chairman also announced that in accordance with Rule 38 of the Society's Rules, the names of Mr. R. G. Black, Babu Ramani Mohan Mallick and Babu Jaladhi Chandra Mûkerjee had been posted up as defaulting members since the last Meeting and were removed from the Members List.

The Chairman also announced the following resolution of the Council regarding the submission of communications for publication in the Society's "*Journal* and *Proceedings*" and "*Memoirs*."

"The attention of authors is drawn to Rule I of Regulations regarding the submission of communications for publication. No alteration or addition necessitating any considerable change of type may be made in proofs. Should any such alteration or addition be necessary, it must be added in a foot-note duly dated and initialed.

Mr. L. S. O'Malley, I.C.S., proposed by the Hon. Mr. E. A. Gait, seconded by Mr. J. Macfarlane; Mr. A. M. T. Jackson, I.C.S., proposed by the Hon. Mr. H. H. Risley, seconded by Mr. J. Macfarlane; were ballotted for and elected Ordinary Members.

Dr. N. Annandale exhibited living specimens of the "Rains Insect" (*Trombidium grandissimum*).

The Anthropological Secretary exhibited weighing-beams of the "bismer" type from different parts of India.

The following papers were read :—

1. *Vidyāpati Ṭhākur.—By* G. A. GRIERSON, C.I.E., I.C.S.

2. *Some remarks on the Geology of the Gangetic Plain.—By* E. MOLONY, I.C.S.

3. *The Nafāïsu-l-Maāsir.—By* H. BEVERIDGE, I.C.S. (retired).

4. *Notes on the Species, External Characters and Habits of the Dugong.—By* N. ANNANDALE, B.A., D.SC.

5. *Hedyotis sisaparensis, a hitherto undescribed Indian species.—By* CAPTAIN A. T. GAGE, I.M.S.

6. *Result of the examination of the Nyaya Sutras of Gautama.—By* MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A.

The paper will be published in the "*Journal* and *Proceedings*," Vol. I, No. 10.

7. *Materials for a Flora of the Malayan Peninsula. No. 18.—By* SIR GEORGE KING, K.C.I.E., LL.D., F.R.S., and J. S. GAMBLE, ESQ., C.I.E., M.A., F.R.S.

(Abstract.)

Owing to an unforeseen cause of delay, it has been found necessary to postpone the publication of the Natural Orders No 75 *Apocynaceæ*, No. 76 *Asclepiadaceæ* and No. 77 *Loganiaceæ* for a short while; consequently the present part, No. 18 of the "Materials for a Flora of the Malayan Peninsula," contains the orders which succeed, *viz.*, No. 79 *Hydrophyllaceæ* to No. 85 *Lentibulariaceæ* inclusive, together with No. 87 *Bignoniaceæ* and 88 *Pedalineæ*. No. 78 *Gentienaceæ* has already appeared in part 17, and No. 86 *Gesneraceæ* will have to come later on with the three orders above mentioned as having had to be postponed.

The whole of the work or six out of the nine orders now presented : *Convolvulaceæ*, *Solanaceæ*, *Scrophularineæ*, *Orobanchaceæ*, *Lentibulariaceæ*, and *Pedalineæ* has been done by Lieutenant-Colonel Prain, I.M.S. ; that on the *Boraqineæ* by Sir G. King ; and that on *Hydrophyllaceæ* and *Bignoniaceæ* by Mr. Gamble.

The nine orders include 53 genera and 150 species ; some of the species are now described for the first time.

The paper will be published in full in an Extra No. of the "*Journal* and *Proceedings*" for 1905.

8. *Some notes on dates of Subandhee and Dingnag.—By* MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A.

The paper will be published in the "*Journal* and *Proceedings*," Vol. I, No. 10.

DECEMBER 1905.

The Monthly General Meeting of the Society was held on Wednesday, the 6th December 1905, at 9-15 P.M.

THE HON'BLE MR. JUSTICE ASUTOSH MUKHOPADHAYYA, M.A., D.L., Vice-President, in the chair.

The following members were present :—

Dr. N. Annandale, Babu Muralidhar Banerjee, Major W. J. Buchanan, I.M.S., Mr. I. H. Burkill, Babu Monmohan Chakravarti, Mr. B. L. Chaudhuri, Mr. W. K. Dods, Mr. L. L. Fermor, Rev. E. Francotte, S.J., Mr. H. G. Graves, Mr. T. H. Holland, Mr. D. Hooper, Rev. E. Lafont, S.J., Mr. W. A. Lee, Mr. J. Macfarlane, Mr. R. D. Mehta, Mr. J. R. Nicoll, Hon. Mr. Justice F. E. Pargiter, Mr. G. Pilgrim, Hon. Mr. H. H. Risley, Major L. Rogers, I.M.S., Dr. E. D. Ross, Mr. C. Saunders, Rai Ram Brahma Sanyal Bahadur, Pandit Yogesa Chandra Sastree, Mahamahopadhyaya Haraprasad Shastri, Babu Chandra Narain Singh, Mr. H. E. Stapleton, Pandit Vanamali Vedantatirtha, Babu Amulya Charan Vidyabhushan, Rev. A. W. Young.

Visitors :—Mr. and Mrs. P. Buckland, Mr. J. C. Brown, Mr. J. M. Burjojee, Mr. Douglas H. Campbell, Babu Asutosh Chatterjee, Captain Coldstream, R.E., Dr. J. N. Cook, Mr. and Mrs. J. D. Guise, Mr. Holmes, Mrs. Kilburn, Colonel Macrae, Captain and Mrs. Murray, Mr. O'Kinealy, Mr. H. Pedler, Mr. W. H. Pickering, Mr. Pearre, Mr. J. Wilson, Mr. R. W. Williamson, and others.

The minutes of the last meeting were read and confirmed.

Thirty-five presentations were announced.

The Chairman announced that Mr. I. H. Burkill had been re-elected a member of the Library Committee during the year.

The General Secretary read the following resolutions of the Sub-Committee appointed by Council to frame new rules for lending out manuscripts.

Loans to India.

Resolved :—

1. No manuscript shall be lent out to any member or non-member without the recommendation of one of the Philological Secretaries.

The loan of a manuscript or manuscripts to non-members must receive the sanction of Council in addition to the recommendation of the Philological Secretary.

In the case of non-members a security may be demanded.

2. As a rule the number of manuscripts which a member is

entitled to borrow shall be limited to two, but this number may be exceeded on the recommendation of the Philological Committee.

3. Every loan shall be reported to the Council.

4. All manuscripts lent must be returned at the end of three months.

5. With regard to Editors each individual case will be dealt with on its own merits.

The conditions under which each editor may borrow manuscripts will be forwarded with his letter of appointment.

Loans to Europe.

1. Loans cannot be made to private individuals but only to Corporate Bodies.

2. Loans to Corporate Bodies in Europe must receive the sanction of the Council.

3. The loan is to be made in the first instance for six months only, and renewals of loan for periods of three months only.

4. With each manuscript lent a form will be sent in duplicate, and three forms of application for renewal: one form will be retained by the borrower and the other duly signed by him returned to the Society.

5. That the Corporate Body to whom the loan is made will not be at liberty to allow the manuscript to leave their premises.

General Rules.

6. Certain manuscript of special importance or rarity shall be placed by the Philological Secretaries in consultation on a reserve list. These manuscripts will be marked in the Library Catalogue with asterisks, and, as a general rule, shall not be lent out of the Society's rooms.

7. It is, however, at the discretion of the Council, in very special cases, to sanction the loan of such manuscript.

Form of Acknowledgment.

We have to acknowledge receipt of.............No............... in good order and condition, to be held in trust for the Asiatic Society of Bengal and not to be removed from our premises.

We hereby undertake either to return the said manuscript by the..............(the date being six months from the date of presumable arrival) or to make a formal application for renewal of the loan by the...........(five months from the time of presumable arrival), and we further undertake to return the manuscript in the same order and condition securely packed by insured parcel post by the............ if previous sanction to retain it for a further period has not been received by the.............

Form of Application for Renewal.

We have acknowledged the receipt of........No..............on the.......... The manuscript has been used for......... . months.

The manuscript is wanted for a further period of three months, and we shall be obliged by the Society's sanction of this renewal.

Mr. E. R. Watson, proposed by Mr. D. Hooper, seconded by Dr. N. Annandale; Mohamed Hossain Khan Midhut, proposed by Dr. E. D. Ross, seconded by Mr. J. Macfarlane; Mr. K. Marsden, proposed by Dr. E. D. Ross, seconded by Mr. J. Macfarlane; Mr. J. Wilson, proposed by Mr. T. H. Holland, seconded by Dr. E. D. Ross; were ballotted for and elected Ordinary Members.

Dr. N. Annandale gave an exhibition illustrating the use of the blow-gun in Southern India and Malaya.

Mr. T. H. Holland gave a lecture on recent earthquakes in India (lantern demonstration).

The following papers were read :—

1. *Earth Eating and the Earth-eating habit in India.—By* D. Hooper and H. H. Mann.

This paper will be published in the *Memoirs.*

2. *Formation of New Castes.—By* R. Burn, I.C.S.

3. *Notes on the Fauna of a Desert Tract in Southern India, I and II—By* N. Annandale, D.Sc.

This paper will be published in the *Memoirs.*

4. *Ascaris halicoris* Baird.—By Dr. v. Linstow. *Communicated by* N. Annandale.

5. *Animals in the Inscriptions of Piyadasi.—By* Monmohan Chakravarti.

This paper will be published in the *Memoirs.*

* * *

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SOCIETY'S JOURNAL AND PROCEEDINGS.

Vol. I, 1905.

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ANTIQUITIES; SECOND INDEX FOR
NATURAL SCIENCES WITH
ANTHROPOLOGY.

DIRECTIONS FOR BINDING.

The pages of the Journal should be bound first: they are numbered consecutively at the top in the usual place from 1 to 274. The pages of the Proceedings should follow: they are paged consecutively at the bottom from 1 to 56. Those who wish may bind the list of members and the accounts thereafter. The index, the pagination of which is immaterial, will come last. The lists of books added to the Library are not intended for binding. Wt

Plates i. and ii. to follow page 82.
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Plate iv. to face page 121.
Plate v. to face page 124.
Plate vi. to face page 200.
Plates vii., viii. and ix. to follow page 218. 3
Plate x. (map) to face page 230.
Plate xi. to follow page 260;

or all to be placed at the end of the volume.

ERRATA IN DIRECTIONS FOR BINDING.

Journal and Proceedings, Asiatic Society of Bengal, New Series, Vol. I, 1905.

Line 14, *for* page 258 *read* page 238.
,, 15, ,, Plate IX ,, Plate X.

DATES OF PUBLICATION.

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,,	,,	99–136	,,	,,	35–38	30th	,,	,,
,,	,,	137–158	,,	,,	39–40	11th	September	,,
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